

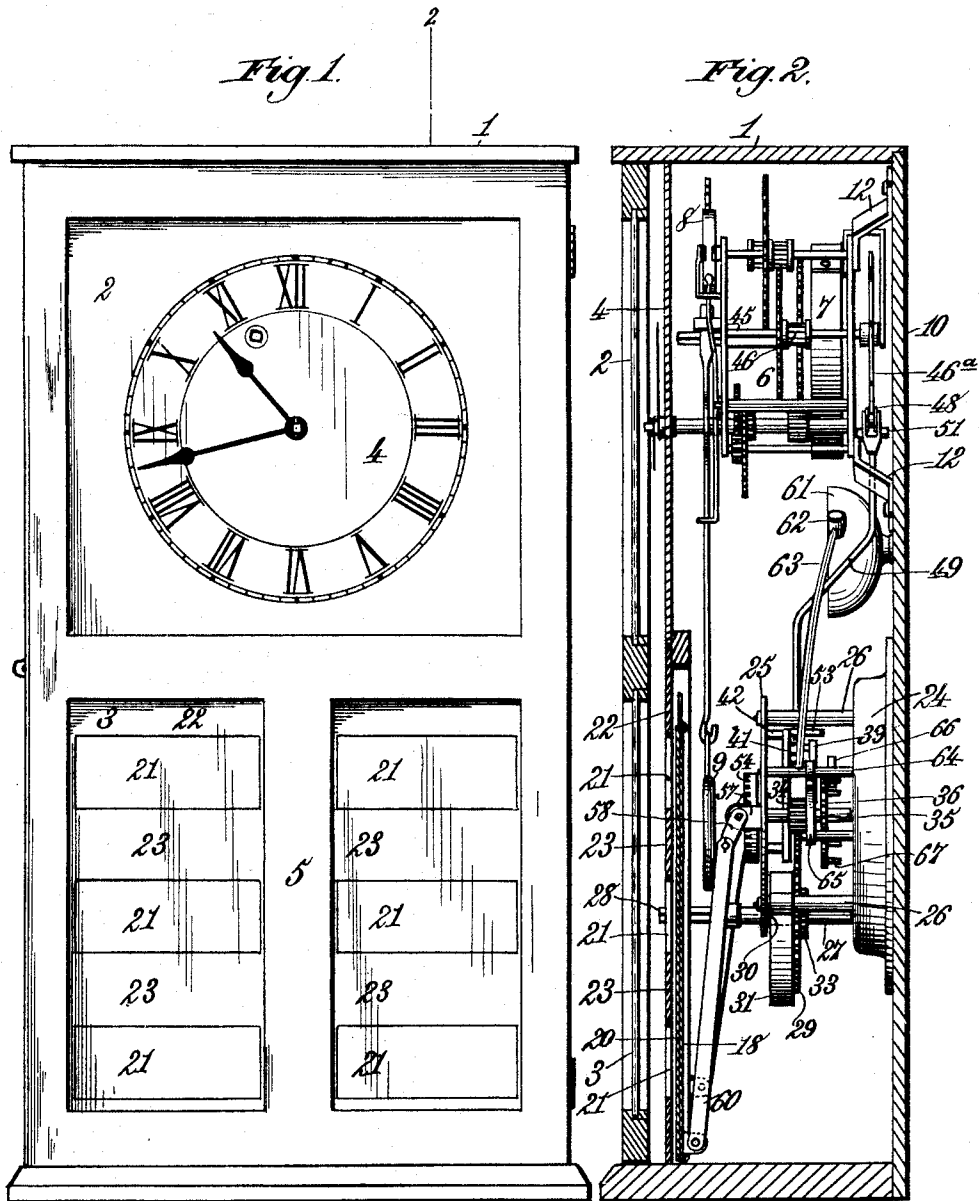
(No Model.)

2 Sheets—Sheet 1.

A. W. KIRKPATRICK.
AUTOMATIC ADVERTISING APPARATUS.

No. 586,500.

Patented July 13, 1897.



Witnesses.
Robert G. Smith,
Dennis Sumby,

Inventor.
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Fig. 3.

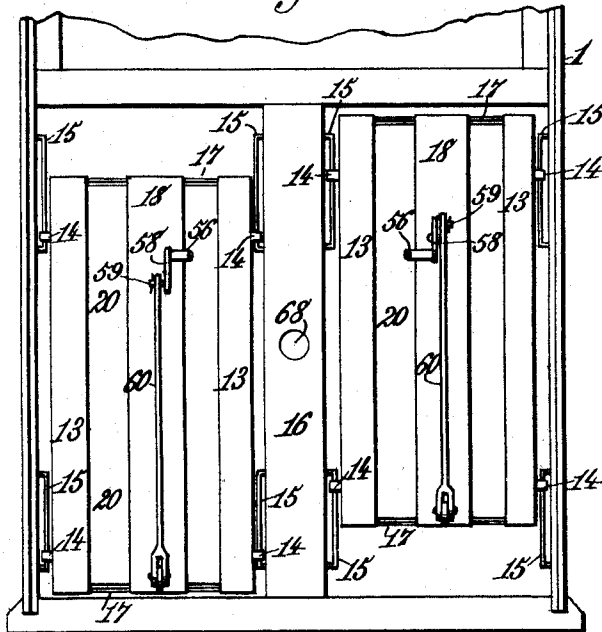


Fig. 5.

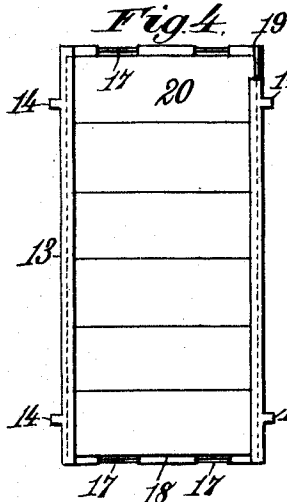
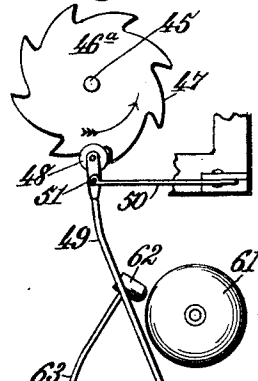


Fig. 6.

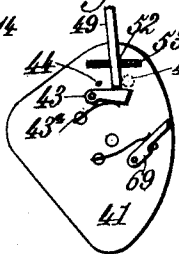


Fig. 7.

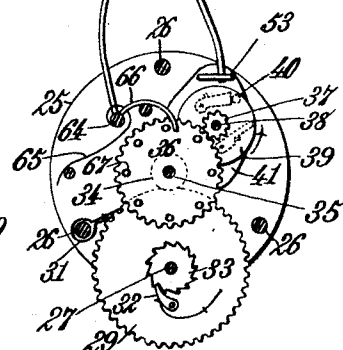
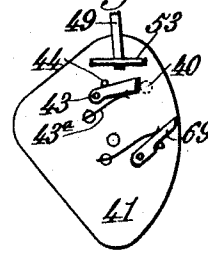


Fig. 8.

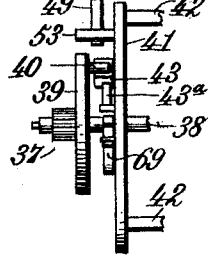
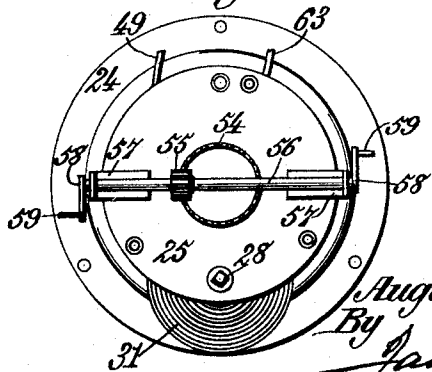


Fig. 9.



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UNITED STATES PATENT OFFICE.

AUGUSTUS W. KIRKPATRICK, OF GREENEVILLE, TENNESSEE.

AUTOMATIC ADVERTISING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 586,500, dated July 13, 1897.

Application filed June 20, 1896. Serial No. 596,317. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS W. KIRKPATRICK, a citizen of the United States, residing at Greeneville, in the county of Greene and State of Tennessee, have invented new and useful Improvements in Automatic Advertising Apparatus, of which the following is a specification.

This invention relates to automatic advertising apparatus, my object being to provide a simple and comparatively inexpensive attachment for a clock or mechanism for measuring time whereby a plurality of series of advertising-placards may be shifted at predetermined intervals in opposite directions in such manner as to expose alternately a different series of placards throughout and at the same time cause those previously exposed to view to disappear.

It is a further purpose of my said invention to provide an attachment of this character by which any number of placard series may be operated or shifted in parallel right lines, the whole number of separate series being either moved in the same direction or part in one direction and part in the opposite direction simultaneously, an entirely different set of placards or advertisements being substituted for those previously exhibited, which are caused to disappear until the next automatic movement takes place, when they are restored to their original positions and again exposed.

One object of my invention is to provide an attachment of this kind which may be applied to any ordinary clock without requiring any material change in the clock mechanism and without impairing the accuracy of the latter in any degree.

The invention consists to these ends in the novel features of construction and new combinations of parts hereinafter fully explained, and then particularly pointed out and defined in the claims which conclude this specification.

For the purposes of this description reference is had to the accompanying drawings, in which—

Figure 1 is a front elevation of an automatic advertising attachment in which my invention is incorporated. Fig. 2 is a vertical section from front to rear upon the line 2 2

in Fig. 1. Fig. 3 is a rear elevation of the advertising attachment of the clock, the upper portion of the latter being broken away. Fig. 4 is a detail front elevation of one of the advertisement-frames. Fig. 5 is a view showing the automatic shifting mechanism. Fig. 6 is a detail view of the releasing-pawl, showing the action of the thrust-rod. Fig. 7 is a detail view showing the same parts, the pawl being in position to arrest the mechanism. Fig. 8 is a side elevation showing the stop-disk, the pawl, and the lower end of the thrust-rod. Fig. 9 is a front elevation of the shifting mechanism, the thrust-rod and bell-hammer wire being broken off.

The reference-numeral 1 in said drawings indicates the casing of an ordinary clock, its door having transparent panels 2 and 3, by means of which the face or dial 4 and that portion of the front below the face are exposed to view. The lower transparent panel 3 may, if desired, be divided or provided with a central vertical strip 5, formed of any suitable material.

The clock-casing requires no further description, as it is in itself not essentially different from the well-known casings which have long been in use. The clock mechanism also consists of the usual train of gearing 6, operated by a spring 7 or by other known means and having an escapement 8 of any suitable form. In the present instance I have the common form of pendulum 9, but any established equivalent thereof may be substituted. The frame containing the gearing I attach to a board or plate 10, preferably by means of light foot-brackets 12, by which a suitable open space or interval is provided between the frame and the face of the board.

Within the space below the clock-dial in the front of the casing are arranged the placard-slides or advertisement-frames. Each of these consists of a skeleton frame having vertical side bars 13, each of which is provided with eyes 14, movable upon guides 15, which are mounted upon the side of the casing and upon the edge of a central dividing-bar 16. The side bars 13 are connected by slender end pieces 17, which are further connected by a central plate 18, lying between the side bars 13. The latter are provided with shall-

low channels 19 to receive the ends of advertising-placards 20, which may be inserted at the end of the frame. The separate placards are of substantially equal width in order that they may be made visible through a series of openings 21, formed in a screen 22, which lies directly in front of the placards. These openings 21 are separated from each other by imperforate portions 23 of about the same width, so that when the placard-frame is in proper position every alternate placard will be visible through the openings, while the others will be concealed by the solid parts of the shield. Each of the frames thus constructed is capable of movement in a right line a distance substantially equal to the width of a placard or open space 21, the means for effecting this movement being as follows:

Upon the board 10, below the clock mechanism and directly in rear of the advertisement-frames, is a base-plate 24, which may be of circular form. Between this base-plate and a plate 25, parallel with and connected to it by posts 26, I arrange a train of gears consisting of the following members:

Upon a shaft 27, which has an angular key-winding stem 28, is a main gear 29, provided with a spring-barrel 30, to which one end of a spiral spring 31 is attached, and a pawl 32, which takes into a ratchet 33 on the shaft, the arrangement being similar to that in an ordinary train of clock-gearing driven by a mainspring. The gear 29 meshes with a pinion 34 on a shaft 35, which also carries a spur-gear 36, the latter meshing in turn with a pinion 37 on a shaft 38. The shaft last named carries a plain disk 39, provided with a short pin or stud 40, which projects from one of the flat faces of the disk near its periphery. At a little distance from said disk and close to the end of the pin 40 lies a plate 41, rigidly held in parallelism with the disk by short posts 42, connected to the plate 25. Upon said plate 41 is pivoted a pawl 43, having its free end beveled slightly and normally held up by a spring 43^a against a stop-pin 44, in which position the beveled end of the pawl lies in the circle of revolution of the pin 40, whereby the movement of the train of gearing under the impulse of the spring 31 is arrested.

Upon one of the shafts of the clock-gearing—as, for example, the shaft 45, having a pinion 46, which meshes with the main gear—I mount a multiple cam-disk 46^a, having a series of peripheral cams 47, which bear some resemblance to the teeth of a circular saw. Against the edges of these teeth bears an anti-friction-roll 48, journaled in the forked end of a thrust-rod 49, which is normally pressed upward by a leaf-spring 50, which maintains the engagement of the roll 48 with the edges of the teeth or multiple cam projections 47, the upper end of the rod being upon a pivotal support 51 in the forked end of the leaf-spring 50. Thence the rod extends downward, its lower end passing through a guide-

opening 52 in a bracket 53, which projects from the plate 41. In this position the end of the rod lies directly over the back of the pawl 43 between the free end of the said pawl and the stop-pin 44. When the cam-disk 46 is in revolution, each of its cams 47 will drive the rod 49 downward until the cam passes off the roll 48 on the end of the rod. This downward movement pushes the nose of the pawl off the stop-pin 40, thereby permitting the pin to pass over the back of the pawl. At the same instant that this release is effected the point of the cam 47 passes off the roll 48 on the upper end of the rod, which is thrown up by the leaf-spring 50, thus removing its lower end from the path of the stop-pin 40. The disk 39 being thus released, the whole train of gears is free to move under the impulse of the mainspring 31 until the disk completes a single revolution, when it is again arrested by the pawl 43, which is thrown up against its stop-pin 44 by the spring 43^a as soon as the stud 40 passes over its back.

The shaft 35 is prolonged and extends through the plate 25, and upon its projecting end is mounted a crown-gear 54, which meshes with a pinion 55, the latter being mounted on a shaft 56, which lies parallel with the face of the crown-gear and in the line of its diameter or nearly so, being supported by brackets 57, attached to opposite portions of the plate 25. Upon the ends of this shaft outside the brackets are mounted crank-arms 58. I prefer to arrange these arms one upon one side and the other upon the opposite side of the shaft, so that as one ascends the other will descend.

Each crank-arm 58 is provided with a crank-pin 59, to which is connected one end of a pitman 60, the other end of the latter being connected to one of the advertisement-frames, preferably at or near its lower end. By the opposite arrangement of the crank-arms 58 each half-revolution of the crank-shaft 56 will carry one of the advertisement-frames upward and the other downward. The weight of one being thus counterbalanced by the other, the shifting mechanism can be operated by a comparatively light spring-power.

In order to attract the attention of those in the neighborhood of the apparatus, I provide a small gong 61, which is sounded by a hammer 62 at each shifting of the advertisements. The arm 63, upon which the hammer is mounted, is rigidly attached to a rock-shaft 64, which is acted upon by a spring 65 in such manner as to normally throw the arm 63 toward the gong. Rigid with said rock-shaft is a lever-arm 66, the end of which rests upon one of a series of pins 67, projecting from the flat rear face of the spur-gear 36. The revolution of said gear draws the arm 63 back, compressing the spring 65, and releases the lever-arm 66 by the pin 67 passing off it at or about the same instant that the disk 39 is released by the operation of the thrust-rod 49.

The winding-stem 28 on the shaft 27 pro-

jects through an aperture 68 in the central vertical dividing-bar 16, said aperture registering with a key-opening in the screen 22.

By varying the number of cam projections 47 on the multiple cam-disk 46, the intervals between the shifting of the advertisement-frames may be varied to any degree desired. In the present construction the cam-disk acts once in six minutes or thereabout.

10 I do not limit my invention to the use of springs as a motive power nor to the attachment of the cam-disk 46 to a particular shaft of the clock-gearing. Neither do I restrict it to any specified number of advertisement-frames in combination with a single automatic shifting apparatus. It is evident also that it is immaterial whether the frames carrying the advertisements move vertically or horizontally and in opposite directions or in the same direction simultaneously. My only purpose in shifting them in opposite directions of movement, as shown in this instance, is to reduce the power of the spring or other means by which the train of gears is driven.

25 A backlash-stop 69 may be provided, as shown in Figs. 6 and 7, held by a spring against a back-stop, so that the pin 40 on the disk 39 can pass it in one direction, but will be arrested by it should there be any material recoil on striking the pawl 43.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an automatic advertising apparatus, the combination with a plurality of advertisement-frames arranged to move in parallel right lines behind a screen having openings which expose the advertisements, of automatic mechanism connected to said frames to move the same, an automatic stop for arresting said mechanism after each movement, means for releasing said stop, and a train of clock-gearing connected to the releasing device to operate the latter at predetermined intervals, and permit it to shift the advertisement-frames simultaneously, substantially as described.

2. In an automatic advertising apparatus,

the combination with a plurality of advertisement-frames arranged to move in parallelism behind a screen having openings which expose every other advertisement in each frame, of crank-arms connected to said frames, a train of gearing to drive the crank-shaft, a motive power for said gearing, a disk on a shaft geared to said train, a spring-lifted thrust-rod having one end over a spring-pressed pawl on a rigid support, the end of said pawl being in the line of travel of a pin on the disk, a train of clock-gearing, and a disk having multiple cam projections acting upon one end of the thrust-rod, substantially as described.

3. In an automatic advertising apparatus, the combination with constantly-driven gearing to operate said apparatus, of a spring-pressed pawl on a stationary support to arrest the movement of the gearing, a thrust-rod to disengage said pawl, a disk having a series of cam projections to operate the thrust-rod, a spring to restore the latter, and a train of clock-gearing to give uniform revolution to said disk, substantially as described.

4. In an automatic advertising apparatus, the combination with a plurality of advertisement-frames arranged behind a screen having openings and imperforate portions alternately, of a crank-shaft having arms connected to said frames, gearing to turn the crank-shaft, a disk having a pin projecting from one face and carried by a shaft driven by said gearing, a pawl on a rigid support having a spring to hold it in the path of said pin, a thrust-rod to disengage the pawl, a cam-disk to operate said thrust-rod, a spring to preserve the engagement between the latter and the cam-disk, and a separate train of gearing to operate the cam-disk, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUSTUS W. KIRKPATRICK.

Witnesses:

L. H. TRIM,

W. H. PIPER