

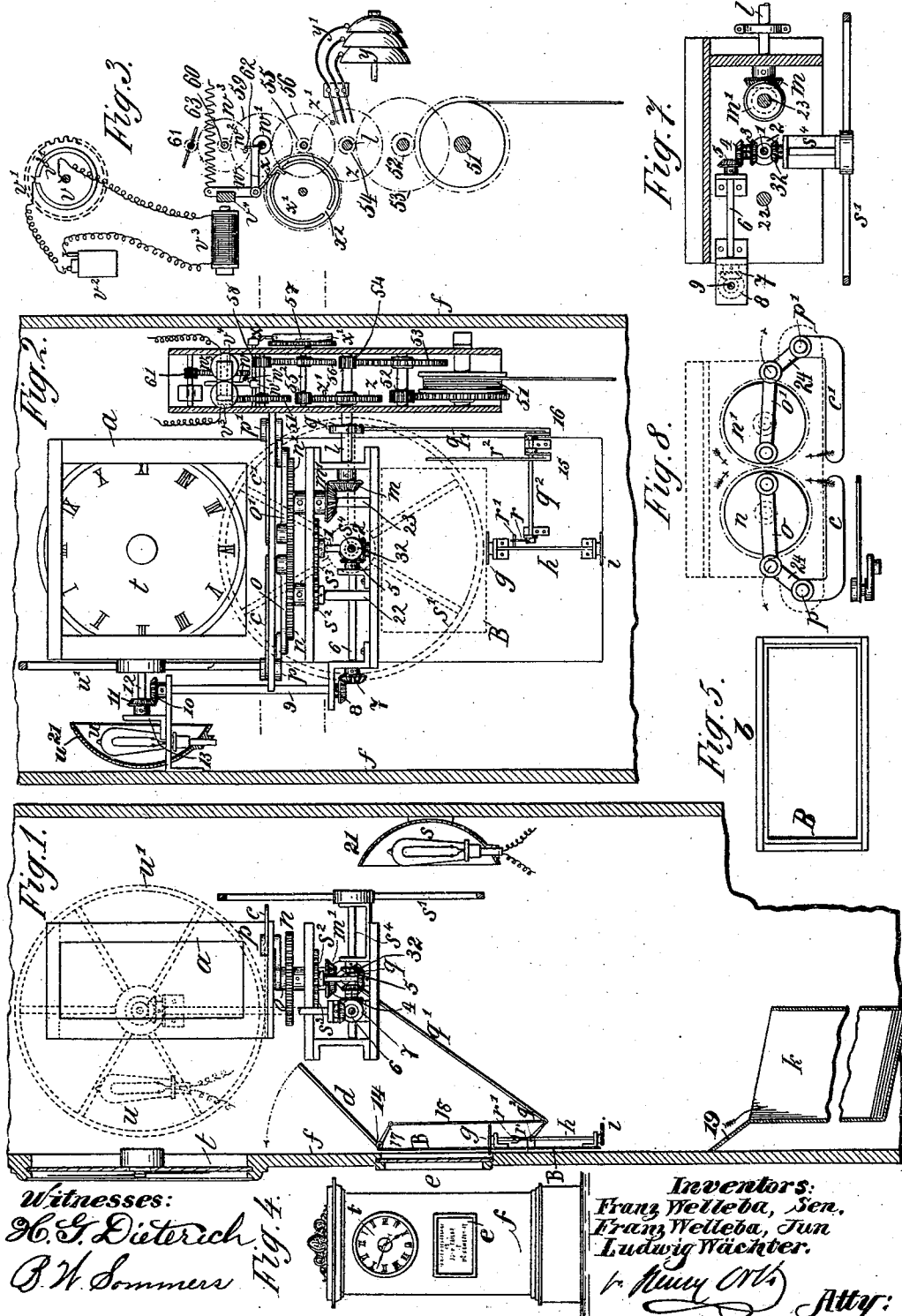
(No Model.)

2 Sheets—Sheet 1.

F. WELLEBA, Sr., F. WELLEBA, Jr. & L. WÄCHTER.
ADVERTISING CLOCK.

No. 479,687.

Patented July 26, 1892.



(No Model.)

2 Sheets—Sheet 2.

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Fig. 9.

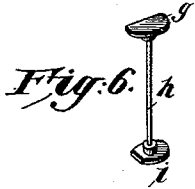
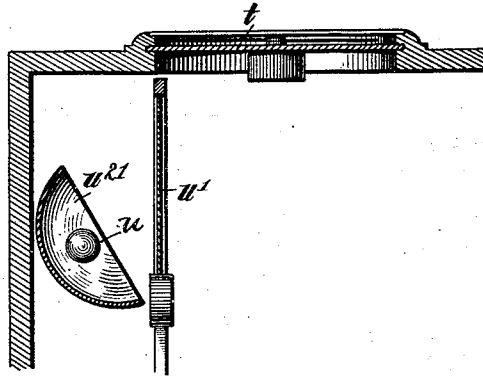
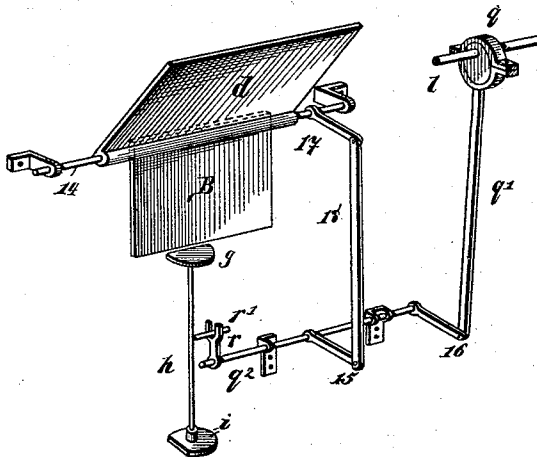


Fig. 10.



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UNITED STATES PATENT OFFICE.

FRANZ WELLEBA, SR., FRANZ WELLEBA, JR., AND LUDWIG WÄCHTER, OF
VIENNA, AUSTRIA-HUNGARY.

ADVERTISING-CLOCK.

SPECIFICATION forming part of Letters Patent No. 479,687, dated July 26, 1892.

Application filed July 24, 1891. Serial No. 400,621. (No model.)

To all whom it may concern:

Be it known that we, FRANZ WELLEBA, Sr., FRANZ WELLEBA, Jr., and LUDWIG WÄCHTER, subjects of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Advertising-Clocks; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The invention relates to an apparatus for displaying advertisements; and it has for its object the provision of means whereby a number of advertisements are successively exposed to view; also, the provision of means for rendering said advertisements visible at night; also, the provision of means whereby said advertisements may be rendered more conspicuous by presenting the same under different colors; also, the provision of means whereby attention may be drawn to the advertisement by an audible signal, and, finally, the combination, with the advertising apparatus, of a timepiece, and the provision of means for rendering the time indications on its dial visible at night and for rendering said dial more conspicuous by presenting the same in various colors.

To these ends the invention consists in the combination, arrangement, and operation of mechanisms whereby the desired results are attained and in structural features of parts thereof, as will now be fully described, reference being had to the accompanying drawings, in which like symbols indicate like parts wherever such may occur in the several figures, whereof—

Figure 1 is a vertical transverse section of an advertising-clock embodying our invention. Fig. 2 is a rear elevation thereof, the back of the clock-case being removed. Fig. 3 is a detached view of an electrically-controlled motor for operating the feeding and shifting mechanism of the advertising-cards and the shifting mechanism for the screens,

said motor being controlled by the movement of the timepiece. Fig. 4 is a front elevation of the advertising-clock, on a reduced scale, the clock mechanism proper being omitted in all of the above-described figures of drawings. Fig. 5 is a plan view of one of the advertising-cards. Fig. 6 is a perspective view of the disks used for shifting the cards from the point of exposure. Fig. 7 is a plan view of a portion of the transmitting mechanism for operating the multicolored screens. Fig. 8 is a top plan view of the mechanism for feeding the advertising-cards from their holder to a chute that conveys them to the point of exposure, the holder being shown in dotted lines. Fig. 9 is a sectional view showing the relative arrangement of the dial-screen, its illuminating device, and the reflector therefor; and Fig. 10 is a detail perspective view of the mechanism for feeding the advertising-cards to and shifting the same from the point of exposure; also, of the transmitting mechanism that is controlled by the motor that actuates the feeding and shifting mechanism for the advertising-cards and screens.

In the drawings, *f* indicates the clock-case, *t* the clock-dial, and *e* a glass-covered aperture for the exposure of the advertisements. (See more particularly Fig. 4.)

The advertisements are printed on or otherwise applied to a card *B*, of a transparent or more or less transparent material—such as glass, celluloid, mica, or paper rendered more or less transparent—and are framed in a frame *b*, Fig. 5, of light material, such as aluminium.

Along the upper edge of the display-aperture *e* is arranged a crank-shaft 14 at such a distance from the clock-case as to leave sufficient space between the two for the passage of an advertising-card, as shown in Fig. 1.

On the crank-shaft 14 is secured a table or chute *d*, that receives the cards from a holder, as hereinafter explained, which table in its normal position lies in an inclined plane, so that when an advertising-card is fed thereto it cannot pass between the shaft 14 and the clock-case until said table *d* is moved to a position in which said card will be substantially parallel with the front vertical wall of the clock-case.

Below the display-opening *e* is arranged a

vertical rock-shaft h , that carries a mutilated disk g at its upper end and a like disk i at its lower end, each disk having a segment cut away at points at right angles to each other, (see Figs. 6 and 10,) the distance between the upper faces of said disks being equal to the height of an advertising-card, for purposes presently explained. The rock-shaft h has a radial pin r' , that lies in the fork at the end of a radial or crank arm r on a rock-shaft q^2 , which shaft carries two cranks 15 and 16, the former being connected by a rod 18 to a crank 17 on a rock-shaft 14, and the crank 16 is connected by a rod q' with an eccentric q , that is secured to one of the revoluble arbors of the electrically-controlled motor, Figs. 2 and 3—as, for instance, the arbor l , Figs. 2 and 10. The arrangement of the eccentric q is such that as the arbor l is rotated the shaft q^2 will make a quarter-revolution, first in one and then in a reverse direction, and this rocking movement results in a like movement of the vertical rock-shaft h and the horizontal rock-shaft 14.

In Fig. 2 the parts described are in their normal positions, an advertising-card resting on the upper disk g . If now a second advertising-card is fed to the table d and the rock-shaft q^2 rocked in the proper direction, said table will tilt the card so that it can pass between the shaft and clock-case. The vertical rock-shaft will, however, also be rocked, bringing the cut-away portion of the upper disk g in line with the clock-case, the like cut-away portion of the lower disk being moved out of line with said clock-case, so that the card in rear of the display-aperture can drop down and will be supported by the said lower disk i , the upper edge of said card lying below the lower face of disk g , so that the card delivered by the table will be supported by said upper disk g . When the rock-shafts 14 and h are rocked back to their normal position, both cards will drop down onto a directing board or chute 19, that directs them into a suitable receiver k , these operations being continued until the supply of cards is exhausted.

Within the clock-case, immediately opposite the display-aperture e , is arranged a reflector 21, in front of which is located an incandescent lamp s , connected with a source of electricity, and on a shaft s^4 is secured a circular screen s' , one-half of which lies in front of the reflector and lamp, said screen being divided into radial sections in which are arranged differently-colored glasses, said screen having an intermittent motion imparted to it that coincides with the shifting of the advertising cards at the display-opening e , as will be presently described.

Within the clock-case is arranged a holder a , that consists of a rectangular frame for the reception of the advertising-cards B , which are stacked therein and are expelled therefrom one after another at proper intervals, the holder being arranged at a proper eleva-

tion, so that the expelled cards may drop onto the receiving and delivery table d , the lowermost card of the stack being expelled by mechanism which we will now describe. Below the holder are arranged two vertical shafts 22 and 23, that carry the intergearing wheels n and n' , respectively, and o and o' indicate toggle-levers eccentrically pivoted to said wheels n and n' , the links 24 of said levers being rigidly secured to the fulcrums of two ejector-levers c and c' , respectively, that work through suitable slots in the rear portion of the holder a , which has a delivery-slot in its front portion, through which the advertising-cards pass to the table d . The shaft 23 carries a bevel-pinion m' in gear with a like pinion m on the driving-arbor l of the electrically-controlled motor, which is the prime motor-shaft for all of the movable elements of the advertising devices, with the exception of the signaling devices. The shaft 22 carries a pinion s^2 in gear with a wheel s^3 on a vertical shaft 1, which latter carries a bevel-pinion 2 in gear with a like pinion 32 on the shaft s^4 of screen s' , which derives its intermittent motion, therefore, from shaft 1 through the described gearing. The bevel-pinion 2 on shaft 1 also gears with a like pinion 3 on a short shaft that carries a second bevel-pinion 4 in gear with a like pinion 5 on a horizontal shaft 6. The shaft 6 carries at the end opposite to pinion 5 a bevel-pinion 7 in gear with a like pinion 8 at the foot of a vertical shaft 9, which last-named shaft carries at its upper end a bevel-pinion 10 in gear with a like pinion 11 on the shaft 12 of the circular screen u' , and this mechanism is fully shown in Figs. 1, 2, and 7.

The screen u' , like screen s' , has radial subdivisions provided with differently-colored glasses, which in arrangement may or may not correspond with those in said screen s' . The screen u' whenever space permits is preferably arranged in rear of the clock-dial t ; but to avoid increasing the depth of the clock-case for the purpose of accommodating the screen, its illuminating device, and the clock mechanism (which, as hereinbefore stated, is omitted from the drawings) we preferably arrange the screen u' on one side of and at a proper angle to the dial t , an incandescent lamp u or other suitable illuminating device being placed in rear of the screen and provided with a reflector u^2 , said lamp and reflector being supported from a bracket 13, (see Figs. 2 and 3,) so as to project the light through a colored section of the screen upon the rear face of the dial t , which of course is made of a more or less transparent material.

The motor for intermittently actuating the above-described movable elements of the feed and shifting mechanisms and for imparting an intermittent or step-by-step rotation to the screens, may be a spring-driven motor or a motor driven by a cord and weight, as shown, and consists of a suitable train of gearing 51,

being the cord-drum whose revolution under the action of the weight (not shown) is transmitted by pinion 52, wheel 53, and pinion 54 to the driving-shaft 1. The driving-shaft 1 carries a gear-wheel z , that has a pin z' , that actuates the hammer y' of a bell y or the hammers of a chime of bells, as shown in Fig. 3. The gear-wheel z meshes with a pinion 55, whose arbor carries a gear-wheel 56 in gear with a pinion 58.

On the arbor of the wheel 56 is secured a second pinion 57, (shown in dotted lines in Fig. 2,) said pinion gearing with an escapement-wheel x' , that has an annular flange in which are formed two slots or stop-notches x^2 , Fig. 3, adapted to be engaged by a stop-arm x , rigidly secured to the pivot of a lever w , that carries an armature v^4 . The lever is a bell-crank or angle lever, the vertical arm carrying the armature, while the horizontal arm is adapted to engage a notch or recess in a stop-disk w' on the arbor of a gear-wheel 59. The horizontal arm of the lever w has at its outer end a lug that projects into the path of a pin w^2 on the face of a gear-wheel w^3 , revolved by gear-wheel 59, meshing with a pinion 60 on the arbor of said wheel w^3 , which latter meshes with a pinion 61 on the fly-arbor of the motor.

An electro-magnet v^3 is arranged in proximity to the armature v^4 , and v is a contact-wheel which is continuously revolved by any suitable motor, but preferably by a revolving element of the clock-movement, suitable transmitting-gearing being employed to impart to said contact-wheel the desired speed of revolution, which will depend upon the length of time it is desired to expose the advertising-cards, the wheel being provided with one or more contacts and driven at a greater or less speed, according to said time of exposure. v' and v^{21} are two contact-springs, the spring v' trailing on the periphery of the contact-wheel v and being connected with one pole of a suitable source of electricity. The spring v^{21} trails upon the arbor of the contact-wheel v and is connected with one of the terminals of the electro-magnet v^3 , whose other terminal is connected with the opposite pole of the source of electricity—as, for instance, a battery v^2 —said wheel and springs constituting a circuit-closer.

It will of course be understood that any suitable source of electricity may be employed to energize the electro-magnet v^3 and the films of the incandescent lamps $s u$ and that said source of electricity may be located within the clock-case or outside thereof.

The operation of the advertising-clock is as follows: Whenever the spring v' makes contact, a circuit is established through the electro-magnet v^3 and its armature v^4 is attracted, thereby lifting the horizontal arm of the armature-lever w out of the notch of the stop-disk w' , and simultaneously therewith the lug or stop-arm 62 on the end of said horizontal arm of the lever will move out of the way of the

pin w^2 , while the arm x will be disengaged from its slot or notch x^2 in the escapement-wheel x' , thereby liberating the motor-train. Inasmuch as the circuit through the electro-magnet v^3 is immediately interrupted, the spring 63 will tend to return the armature-lever to its normal position. The horizontal arm of the armature-lever now lies on the periphery of the stop disk or cam w' , while the stop-arm x trails on the annular flange or rim of the escapement-wheel x' , the motor-train remaining in operation until said horizontal arm of the armature-lever drops into the recess or depression of the stop disk or cam w' , at which time the wheel w^3 will also be stopped by the engagement of its pin w^2 with the stop 62 on the horizontal arm of the armature-lever, and simultaneously therewith the arm x will drop into a notch x^2 of the escapement-wheel, thereby locking the motor-train against operation. This periodical partial revolution of the cord or winding drum 51 of the motor-train is, as before described, transmitted to

driving-shaft 1 and through the gearing $m m' n n'$ to the ejector-levers $c c'$, which eject the lowermost advertising-card from the holder a , said card falling onto the table d . The partial revolution of the shaft 1 is also transmitted through the eccentric q to crank-shaft q^2 and by the latter to the vertical and horizontal rock-shafts h and 14, whereby the table d is tilted toward the front of the clock-case to allow the card to slide between rock-shaft 14 and said front of the clock-case in rear of the opening e . Simultaneously therewith the vertical shaft h is rocked to turn the mutilated portion of the upper disk g away from the clock-case, so as to support the card B , the mutilated portion of the lower disk i being in alignment with said clock-case. At the same time a partial revolution is imparted to the screens $s' u'$ through the medium of the gearing $s^2 s^3$ on arbors 22 and 23 of the gears $n n'$ and the transmitting-gear hereinbefore described. At the next contact the same operations take place, except as to rock-shaft h , which is now turned back to bring the mutilated portion of disk g into alignment with the clock-case, while the mutilated portion of disk i is moved out of alignment with said clock-case, thereby allowing the card previously exposed to drop onto said disk i , said card serving as a support for the card which has just been brought into position for exposure, as shown in Fig. 1, the same operations taking place at the next contact, except that the position of the disks g and i will be reversed, both cards dropping onto chute 19 and sliding thence into the receptacle k , while the card now fed to table d will again be supported by the disk g , as in the start. During each periodical operation of the motor-train the screens $s' u'$ will be revolved a distance equal to one of their radial sections, thereby bringing a differently-colored ground in front of the lamps $s u$, and at the same time the pins z' will trip the bell-

hammers *y'* successively, thus giving an audible signal calling attention to the kaleidoscopic changes of the advertisements.

Although we have described our invention in its combination with a timepiece and prefer to control the mechanism that effects the changes from the movement of the timepiece, it is obvious that the latter may be dispensed with and the contact-wheel driven, as hereinbefore stated, by any other suitable motor at the desired speed; but the combination of the timepiece with the advertising devices is not only a matter of convenience, but adds a feature of utility and attraction to the said advertising devices.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. In an advertising apparatus, the combination of the following instrumentalities, to wit: a casing provided with a display-aperture, a rocking support for the cards arranged in rear of said aperture, an inclined rocking table above the rocking support, a holder for the cards proximate to the table, and an ejector for ejecting one card after another from the holder onto the table, for the purpose set forth.

2. In an advertising apparatus, the combination of the following instrumentalities, to wit: a casing provided with a display-aperture, a rocking support for the cards arranged in rear of said aperture, an inclined rocking table above the rocking support, a holder for the cards proximate to the table, an ejector for ejecting one card after another from the holder onto the table, and an intermittingly-operating motor for actuating said devices, for the purpose set forth.

3. In an advertising apparatus, the combination, with a casing provided with a display-aperture, a fixed illuminating device for the same, and an intermittingly-revolving multicolored light-transmitting medium interposed between the illuminating device and display-aperture, of transparent or translucent advertising-cards, a holder therefor, an intermittingly-moving ejector for ejecting the cards one after the other from the holder, an intermittingly-rocking table to which the cards are fed, and an intermittingly-rocking support and shifting device interposed between the display-aperture and light-transmitting medium, to which the cards are transferred by the table, for the purpose set forth.

4. In an advertising apparatus, the combination, with a casing provided with a display-aperture, an illuminating device for illuminating said aperture, a revoluble light-transmitting medium divided into sections differing in color interposed between the display-aperture and illuminating device, transparent or translucent advertising-cards, and a holder therefor, of an ejector operating to successively eject the cards from the holder, a receiver and transfer table adapted to receive the ejected cards and operating to transfer the same to a point between the display-aper-

ture and the light-transmitting medium, a shifting device for shifting the cards from said aperture, and an intermittingly-operating motor for actuating said devices, for the purpose set forth.

5. In an advertising apparatus, the combination, with a casing provided with a display-aperture, an illuminating device for illuminating said aperture, a revoluble light-transmitting medium divided into sections differing in color interposed between the display-aperture and illuminating device, transparent or translucent advertising-cards, and a holder therefor, of an ejector operating to successively eject the cards from the holder, a receiver and transfer table adapted to receive the ejected cards and operating to transfer the same to a point between the display-aperture and the light-transmitting medium, a shifting device for shifting the cards from said aperture, and an electrically-controlled and intermittingly-operating motor for actuating said devices, for the purpose set forth.

6. In an advertising apparatus, the combination, with a casing provided with a display-aperture, an illuminating device for illuminating said aperture, a revoluble multicolored light-transmitting medium interposed between the aperture and illuminating device, transparent or translucent advertising-cards, and a holder therefor, of an ejector operating to successively eject the cards from their holder, a receiving and transfer table adapted to receive the cards and operating to transfer the same to a point between the display-aperture and light-transmitting device, a shifting device operating to shift the cards from the aperture, an audible signal, and an intermittingly-operating motor for actuating said devices, for the purpose set forth.

7. In an advertising apparatus, the combination, with a casing provided with a display-aperture and a time-dial and containing a time movement, of a holder for the cards, an ejector for ejecting said cards from the holder one after the other, a rocking table to which the cards are fed, a rocking support and shifting device in rear of the display-aperture for supporting the cards thereat and shifting the same therefrom, and a motor controlled by the time-movement to intermittingly operate said devices, for the purpose set forth.

8. In an advertising apparatus, the combination, with a casing provided with a display-aperture, a fixed illuminating device, and a multicolored light-transmitting device interposed between the display-aperture and the illuminating device, of a holder for the advertising-cards, located above the display-aperture, a feed-table interposed between the holder and display-aperture, adapted to receive the cards and transmit them to said aperture, feeding mechanism for feeding the cards one after another from the holder to the said table, a shifting mechanism, such as described, for shifting said cards from said aperture, an intermittingly-revoluble driving-

shaft, and transmitting mechanism operated by said shaft and operating the revoluble light-transmitting device and the card feeding and shifting devices, substantially as and for the purposes set forth.

9. The means for transferring the advertising-cards to the display-aperture *e* and shifting the same from said aperture, consisting of the table *d*, the rock-shaft 14, carrying said table, the rock-shaft *h*, carrying the mutilated disks *g i* and having a radial arm *r'*, and the crank-shaft *q*², connected with rock-shaft 14 and having a forked crank-arm *r* in engagement with the radial arm *r'* of rock-shaft *h*, in combination with a revoluble driving-shaft carrying an eccentric connected with the crank-shaft *q*² and operating to impart a rocking motion to said shaft, as described, for the purpose set forth.

10. The means for illuminating the display-aperture *e*, consisting of a lamp and reflector and a circular transparent screen interposed between the lamp and aperture, said screen being divided into sections of differently colored glass arranged relatively to the lamp to present one of its sections thereto, in com-

bination with an intermittingly-revoluble driving-shaft and transmitting-gear for transmitting a like motion to the screen, for the purpose set forth.

11. The means for intermittingly feeding the transparent or translucent advertising-cards to the receiving and transfer table *d*, consisting of a holder for the cards, having a slot in its opposite lower ends; a pair of ejector toggle-levers *c c'*, adapted to operate in the rear slot of the holder, the intergearing wheels *n* and *n'*, to which the links of the toggle-levers *c c'* are respectively connected, and the bevel-pinion *m'* on shaft of gear *n'*, in combination with the motor-shaft 1, carrying bevel-pinion *m* in gear with pinion *m'*, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANZ WELLEBA, SR.
FRANZ WELLEBA, JR.
LUDWIG WÄCHTER.

Witnesses:

W. B. MURPHY,
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