G. BROWN.

ADVERTISING APPARATUS.

APPLICATION FILED DEC. 19, 1912.

1,114,223.

Patented Oct. 20, 1914.

3 SHEETS—SHEET 1.

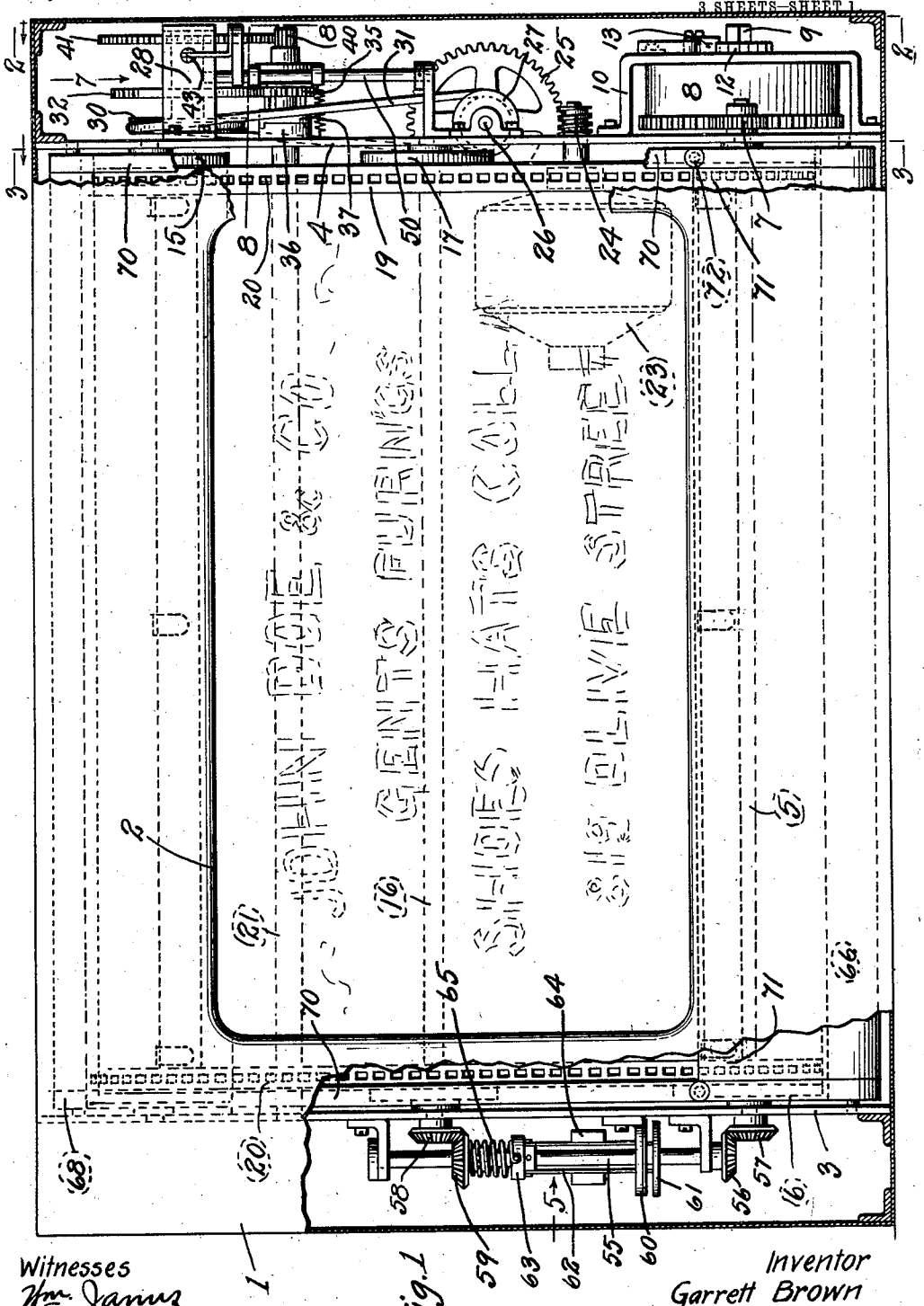


Fig. 1

Witnesses

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By J. R. Cornwall Atty

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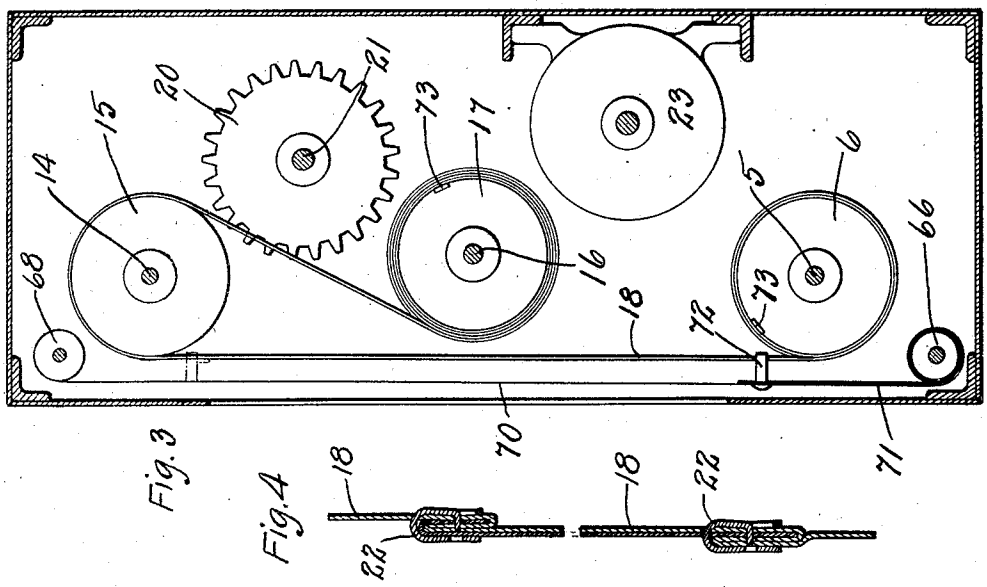


Fig. 3

Fig. 4

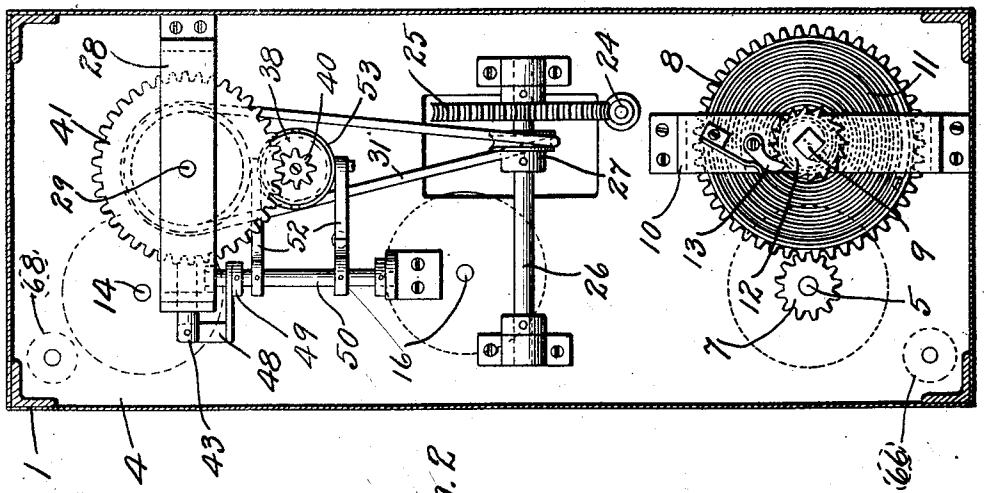


Fig. 2

Witnesses

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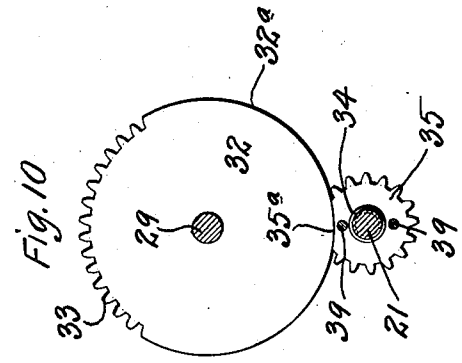
ADVERTISING APPARATUS.

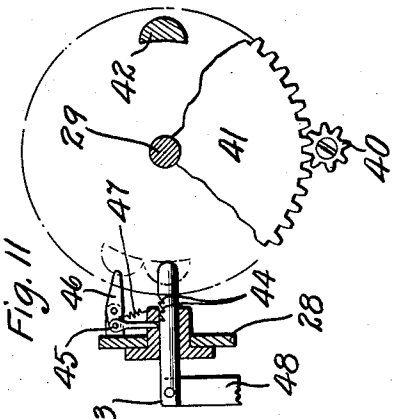
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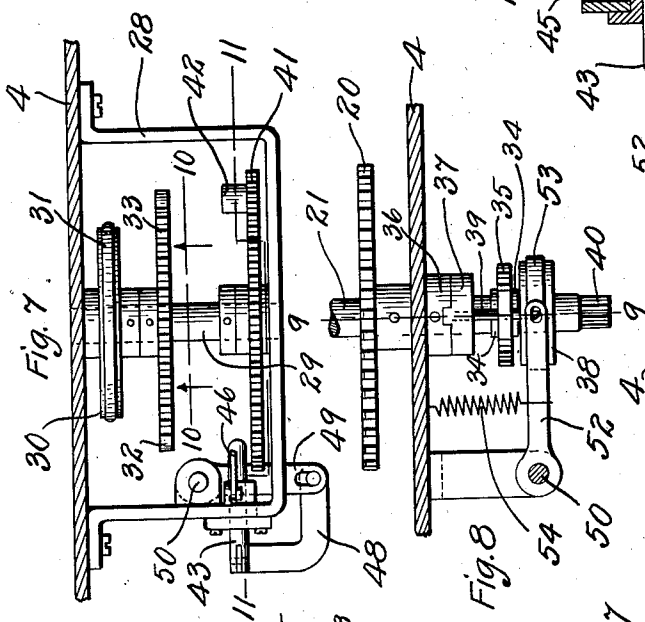
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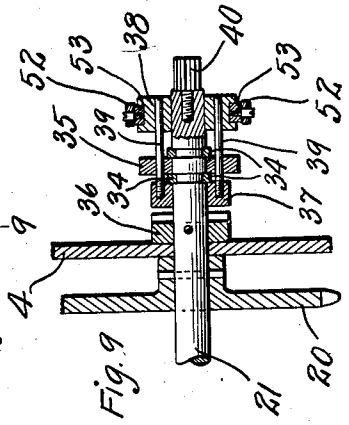
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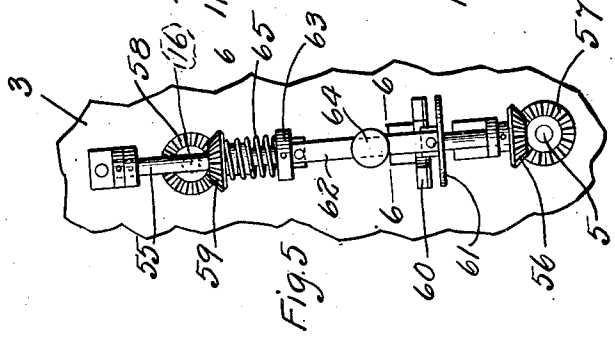
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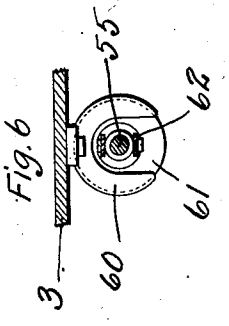












Witnesses

Wm. Vanne

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UNITED STATES PATENT OFFICE.

GARRETT BROWN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO NATIONAL ADVERTISING & DEMONSTRATING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

ADVERTISING APPARATUS.

1,114,223. Specification of Letters Patent. Patented Oct. 20, 1914.

Application filed December 19, 1912. Serial No. 737,688.

To all whom it may concern:

Be it known that I, GARRETT BROWN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Advertising Apparatus, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a front elevational view of an advertising apparatus of my improved construction with parts at the ends thereof broken away in order to more clearly illustrate parts of the actuating mechanism of the apparatus. Fig. 2 is a vertical section taken approximately on the line 2—2 of Fig. 1. Fig. 3 is a vertical section taken approximately on the line 3—3 of Fig. 1. Fig. 4 is a detail section of a portion of the curtain or flexible member which carries the advertising cards and showing the means utilized for attaching the cards to said curtain or flexible member. Fig. 5 is a detail elevational view of the parts seen looking in the direction indicated by the arrow 5 in Fig. 1. Fig. 6 is a horizontal section taken approximately on the line 6—6 of Fig. 5. Fig. 7 is a plan view of the parts seen looking in the direction indicated by the arrow 7 in Fig. 1. Fig. 8 is a horizontal section taken approximately on the line 8—8 of Fig. 1. Fig. 9 is a detail sectional view taken on the line 9—9 of Fig. 8. Fig. 10 is a detail sectional view taken approximately on the line 10—10 of Fig. 7. Fig. 11 is a detail sectional view taken approximately on the line 11—11 of Fig. 7.

This invention relates to that class of advertising devices wherein a flexible member, such as a curtain carrying a series of advertising cards, is wound from one roller or drum onto another, the motion of which curtain is intermittent in order that the cards carried thereby may be successively brought to view directly behind the opening in the front of the box or housing of the apparatus.

The principal object of my invention is to provide a comparatively simple, inexpensive and compact advertising apparatus which can be operated with comparatively little power and which apparatus is particularly designed for use in street and railway cars, waiting rooms, hotel lobbies and in store windows.

A further object of my invention is to construct a comparatively simple advertising apparatus wherein a series of advertising cards carried by a curtain are successively displayed, and which curtain after being wound by intermittent movement from one roller to another is automatically rewound onto one of said rollers during which movement the sight opening in the housing through which the cards are viewed is closed by a flexible member, thereby hiding the cards from view during the time the card carrying curtain or flexible member is rewound onto the feeding or delivery roller.

A further object of my invention is to provide means whereby the advertising cards may be readily positioned upon or removed from the flexible member or curtain, thus making it possible to easily and quickly change the cards as desired.

With the above and other objects in view, my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the box or housing of the apparatus, the same being preferably constructed of sheet metal, and formed in the front wall of said housing is a rectangular opening 2 through which the advertising cards are viewed. Located on the left hand end of the housing is a vertically disposed plate 3 which forms a support for parts of the operating mechanism of the apparatus, and located in the right hand end of the housing is a corresponding plate 4 which forms a support for parts of the operating mechanism.

Journaled in suitable bearings formed in the lower portions of the plates 3 and 4 is a shaft 5, to which is fixed a feed or delivery roller 6, and fixed on the right hand end of this shaft outside the plate 4 is a pinion 7. This pinion meshes with the teeth of a circular rack formed on the exterior of a drum 8, which latter is loosely mounted on a shaft 9, the latter being journaled in a bracket 10 that is fixed to the plate 4. The outer end of a helical spring 11 is fixed to the drum 8 and the inner end of said spring is fixed to the shaft 9. The shaft 9 carries a ratchet wheel 12, the teeth of which are engaged by

a spring pressed pawl 13. The outer end of the shaft 9 is made square or non-circular in order to be engaged by a key when it is desired to rotate said shaft to increase the tension of the spring 11. The pawl 13 is utilized for holding the shaft 9 against reverse rotary motion when the tension of the spring has been increased.

Journaled for rotation in suitable bearings in the upper portions of the plates 3 and 4 is a shaft 14 carrying a roller 15 which is of the same size as the roller 6, and journaled in suitable bearings in the central portions of the plates 3 and 4 and at a point approximately midway between the shafts 5 and 14 is a shaft 16 carrying a roller 17. This last mentioned roller may be termed the "receiving roller" for the reason that it receives the card carrying curtain or flexible member as the same is unwound from the feed or delivery roller 6 during the operation of the apparatus.

The advertising card carrying member 18 comprises a length or section of flexible material, such as leather or fabric, one end of which is fixed to the roller 6, and the opposite end to the roller 17. During the operation of the apparatus, the flexible member in passing from one roller to the other passes over the idle roller 15. Fixed to the side edges of the flexible member 18 are narrow bands 19 of leather or flexible metal, the same being perforated in order to receive the teeth of driving wheels 20, the same being mounted on a shaft 21, which latter is journaled in suitable bearings in the plates 3 and 4.

The advertising cards displayed by my improved apparatus can be attached to the flexible member 18 in any suitable manner, but I prefer to fold the flexible member 18 transversely at suitable distances apart and to insert the top and bottom edges of the advertising cards in the slots formed by folding said member 18 as shown in Fig. 4 and to attach the cards to the flexible member by means of small metal clips 22 which engage the edges of the cards and the folds formed in said flexible member. By this arrangement, the advertising cards can be readily positioned upon or removed from the flexible member or curtain 18.

Fixed on suitable supports within the housing and preferably near the plate 4 is a small motor 23 on the shaft of which is fixed a worm 24, the same engaging with a worm wheel 25. This worm wheel is carried by a shaft 26 which is journaled in suitable bearings on the plate 4, and fixed on said shaft is a small pulley 27. Fixed to the upper portion of the plate 4 is a bracket 28 and journaled therein and in said plate 4 is a shaft 29 carrying a pulley 30, and connecting this pulley with the small pulley 27 is a belt 31.

Fixed on the shaft 29 is a disk 32 provided in its edge with a series of gear teeth 33, thus forming a mutilated gear. Loosely mounted on the shaft 21 and held against longitudinal movement thereon by collars 34 is a mutilated pinion 35, the teeth of which are adapted to engage with the teeth 33 of the disk 32, and the plain portion 35^a of the edge of this mutilated pinion is adapted to engage with the plain edge 32^a of the disk 32. By the construction just described, the continuous rotary motion imparted to the shaft 29 is converted into intermittent motion and thus transmitted to the shaft 21.

Fixed on the shaft 21 immediately adjacent the plate 4 is a disk 36 provided with a clutch face and adapted to engage therewith is a corresponding clutch face of a disk 37, which latter is mounted for sliding movement upon the shaft 21 between said disk 36 and the pinion 35. Loosely mounted on the outer portion of the shaft 21 is a grooved collar 38. Fixed thereto is a pair of pins 39 which pass through suitable apertures formed in the pinion 35 and the inner ends of said pins are seated in the disk 37.

Fixed on the outer end of the shaft 21 is a small pinion 40 which meshes with a large gear wheel 41 which is loosely mounted on the shaft 29. The ratio between the gear wheel 41 and pinion 40 corresponds to the number of advertising cards carried by the flexible member 18, for instance, if there are 10 cards mounted on the flexible member, then the ratio between the gear wheel and pinion must be 10.

Fixed to the inner face of the gear wheel 41 is a lug 42 which is adapted to engage the end of a pin 43, which latter is mounted for sliding movement in a suitable bearing on the bracket 28. This pin is provided with one or more notches 44 and adapted to engage therein is a locking pin 45 carried by a pivoted dog 46, the upper end of which is adapted to be engaged by the lug 42. The pin 45 is normally drawn downward into locking position by a spring 47 and thus when the pin 43 is moved outward away from the shaft 29 by engagement of the lug 42, the locking pin 45 is drawn downward into one of the notches 44, thereby locking said pin 43 in its withdrawn position.

Fixed to the outer end of the pin 43 is one end of a link 48, the opposite end of which is pivotally connected to the outer end of an arm 49 which latter is fixed to a vertically disposed shaft 50. This shaft is journaled in suitable bearings on the bracket 28 and on the plate 4 and fixed on said shaft is a pair of arms 52 the outer ends of which carry a ring 53, which latter is positioned in the groove of the disk 38. A retractile coil spring 54 is connected to one of the

arms 52 and to the plate 4 and normally maintains the disk 38 adjacent to the pinion 35 with the face of the disk 37 in engagement with the clutch face of the disk 36.

Journaled for rotation in suitable bearings on the plate 3 is a vertically disposed shaft 55, and fixed on the lower end thereof is a beveled pinion 56 which meshes with a corresponding pinion 57, the latter being fixed on the corresponding end of the shaft 5. Fixed on the end of the shaft 16 which projects through the plate 3 is a beveled pinion 58 which meshes with a corresponding pinion 59 that is loosely mounted on the shaft 55. Fixed to the plate 3 and projecting outwardly therefrom is a bifurcated bracket 60 through which the shaft 55 passes, and fixed to the underside of this bracket is a disk of leather or analogous material. Arranged to slide on the shaft 55 and normally located immediately beneath the disk 60 is a friction disk 61 which is carried by the lower ends of a pair of vertically disposed spring members 62 which extend upward on opposite sides of the shaft 55 and the upper ends of said spring members are fixed to a collar 63, the same being fixed to said shaft 55. Fixed to the collar 63 is the lower end of a torsional spring 65, the upper end of which is fixed to the hub of the pinion 59.

Journaled in suitable bearings in the plates 3 and 4 below and in front of the shaft 5 is a roller 66, and journaled in suitable bearings above and in front of the shaft 14 is a corresponding roller 68. Fixed to the upper corners of the curtain 71 and projecting rearwardly therefrom are short pins 72 which are adapted to be engaged by fingers 73 which project outwardly from the flexible member 18 near its ends. The parts just described provide means for raising the curtain 71 to close the opening 2 during the time the flexible member 18 is being rewound onto the feed or delivery roller 6.

The operation of my improved apparatus is as follows: The entire operating mechanism of the apparatus is driven from the motor 23, the rotary motion of the motor shaft being transmitted to the shaft 26 by means of the worm 24 and worm wheel 25. Belt 31 operating on the pulleys 27 and 30 transmits the rotary motion to shaft 29 and as the disk 32 is rotated, the plain edge 32^a rides upon the plain edge 35^a of the pinion 35 without imparting movement to said pinion until the teeth 33 engage with the teeth of said pinion. When such engagement takes place, shaft 21 is partially rotated for the reason that the pinion 35 is locked to said shaft 21 by means of the pins 39 which are seated in the disk 37 which latter is locked to the disk 36 by means of the engaging clutch faces and said disk 36 being fixed to said shaft 21. As the shaft 21 is thus partially rotated, the teeth of the driving wheels 20 carried by said shaft engage in the openings in the tapes 19, thereby imparting movement to said tapes and to the flexible member 18 which carries the advertising cards. Thus said member is partially unwound from the roller 6 and is likewise partially wound upon the receiving roller 17. Such action moves the member 18 a distance equal to the height of one advertising card and thus the cards are successively brought into view through the opening 2 in the front wall of the housing. The member 18 unwinding from the roller 6 rotates the same and as a result of such movement, the drum 8 to which the outer end of the spring 11 is fixed is partially rotated, thereby partially winding up said spring and storing power therein, such action being brought about by the engagement of the pinion 7 with the teeth on said drum. As the shaft 5 is rotated, the pinion 57 meshing with the pinion 56 imparts rotary movement to the shaft 55, and the pinion 59 carried by the spring 65 which in turn is carried by the collar 63 meshing with the pinion 58 imparts rotary motion to the shaft 16 and thus the member 18 is wound upon the drum 17 carried by said shaft 16. This intermittent movement imparted to the advertising card carrying member takes place during the time the teeth 33 are in engagement with the teeth of the pinion 35, and during the time the plain edge 32^a of said disk is in engagement with the plain edge 35^a of the disk 35, no movement is imparted to the shaft 21 and consequently the driving wheels 20 are not actuated.

During the time the shaft 21 and driving wheels are at rest, one of the advertising cards is positioned immediately behind the opening 2 in the housing and is thus displayed to view. At the time the last one of the series of cards is in position behind the opening 2, the fingers 73 on the lower portions of the tapes or strips 19 are engaged beneath the projections 72 and the succeeding movement imparted to the rollers 6, 15 and 17 causes said fingers 73 to bear against the projections 72 and move the same upward to the position shown by dotted lines in Fig. 3 and thus the curtain 71 is drawn upward so as to close the opening 2. During the time the member 18 is intermittently wound upon the roller 17, the gear wheel 41 has been intermittently rotated by reason of its engagement with the intermittently rotating pinion 40 carried by the outer end of the shaft 21, and said gear wheel 41 makes one complete revolution during the time all of the cards have been displayed. The final movement imparted to the shaft 21, and which movement raises the curtain 71 as just described, actuates the gear wheel 41 so that

the lug 42 on the rear side thereof bears against the inner end of the pin 43 and causes the same to slide through its bearing and the end of the sliding movement of said pin, the locking pin 45 drops into one of the notches 44, thus holding said pin 43 in its shifted position. As said pin 43 is moved outward, the link 48 connected to said pin draws the outer end of the arm 49 to one side, thereby partially locking the shaft 50 and this movement swings the free ends of the arms 52 carrying the ring 53, outward, thereby moving the grooved disk 38 outward upon the end of the shaft 21 and by means of the pins 39, the disk 37 is drawn away from the disk 36, thereby disengaging the clutch faces on said disks and the shaft 21 is now free to be continuously rotated in the direction reverse to that of its prior movement and thus reverse rotary movement is brought about by the power stored in the coil spring 11, which, as heretofore described, has been wound up during the time the member 18 was unwound from the roller 6 and wound onto the roller 17. The power of the spring 11 is exerted on the drum 8, thereby causing the same to rotate reversely and this rotary motion is transmitted to shaft 5, from thence to shaft 55 through the pinions 56 and 57 and from thence to shaft 16 through pinions 58 and 59 and as a result the entire length of the member 18 carrying the cards will be unwound from the roller 17 and rewound onto roller 6 thereby setting the machine for the successive display of the entire series of cards.

During the return of the member 18 and the cards to the roller 6, the curtain 71 is maintained in position behind the opening 2 and after the last card has passed downward behind said curtain, the fingers 73 on the tapes 19 engage the projections 72 which are positioned as shown by dotted lines in Fig. 3, and said projections are moved downward, thereby unwinding the tapes 70 from the roller 68 and moving the upper edge of the curtain 71 into position below the bottom of the opening 2. It will be understood that the springs coöperating with rollers 66 and 68 are approximately balanced and while of sufficient strength to take up the slack in tapes 70 and curtain 71 when said parts are wound onto their respective rollers, the tension of the spring cooperating with roller 68 is not sufficient to raise the curtain 71 when it is wound onto roller 66. As this action takes place, the lug 42 on the rear side of the gear wheel 41 is moving in a direction reverse to that of its intermittent forward movement and said lug on the final movement of said gear wheel strikes against the end of the pivoted member 46 and as a result the pin 45 is elevated, thereby releasing the pin 43 and the same will slide back to its normal position under the influence of the spring 54, which spring is connected to the arms 52. This movement restores the parts 49 and 48 to their normal positions and moves the disk 38 upon the shaft 21 so that the clutch face of the disk 37 is reëngaged with the clutch face of the disk 36 and the parts are now set to again intermittently wind the member 18 from the roller 6 onto the roller 17 and thus successively bring said advertising cards on said member 18 into position to the rear of the opening 2 where they may be readily observed.

The initial pull of the spring 11 to bring about the reverse movement of the parts as just described will tend to cause said parts to operate at considerable speed and to offset this action, I provide the governor comprising the weighted spring members 62 which, when the shaft 55 rotates at high speed, act to raise the disk 61 against the leather disk on the underside of the bracket 60 and thus said disk 61 performs the function of a brake to retard and regulate the speed at which the parts move during the reverse winding of the member 18. The spring 65 forms a yielding connection between the disk 63 and the pinion 59 and compensates for any differential rotary movement of the shaft 16 due to the increase of diameter as the member 18 winds onto the roller carried by said shaft.

An apparatus of my improved construction is comparatively simple, is entirely automatic in operation, can be operated with a comparatively small motor and provides simple means for intermittently and successiveley displaying advertising cards and the like in street and railway cars, hotel lobbies, waiting rooms and in show windows. The flexible member 18 can be made in any length to accommodate any number of advertising cards and by providing the transverse folds in said member and utilizing small metal clips the cards can be readily positioned upon or removed from said flexible member. If it is desired to vary the periods of time during which the cards are displayed, it is only necessary to change the relative sizes of the mutilated gears 32 and 35.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved advertising apparatus can be made and substituted for those herein shown and described without departing from the spirit of my invention the scope of which is set forth in the appended claims.

I claim:

1. In an advertising apparatus of the class described, a flexible member which is folded transversely to provide slots, advertising cards positioned on said flexible member with their upper and lower edges seated in the

slots therein, and means for fastening the cards to the flexible member.

2. In an advertising apparatus of the class described, a pair of rollers, a flexible member arranged to wind from one roller onto the other, perforated tapes attached to the edges of said flexible member, means including toothed wheels which engage the perforated tapes for intermittently moving the same and the flexible member from one roller onto the other, automatically operating spring actuated means for rewinding the flexible member onto one of the rollers, and a centrifugal governor coöperating with said rewinding means for controlling the speed thereof during the rewinding operation.

3. In an advertising apparatus of the class described, a housing having an opening, a pair of rollers within the housing, a flexible member arranged to wind from one roller onto the other, which flexible member is adapted to carry detachable advertising cards, means including a pair of toothed wheels which directly engage the side edges of the flexible member at points between the rollers for intermittently moving the same a distance approximately equal to the width of one of the advertising cards carried by the flexible member so that said advertising cards are successively displayed through the opening in the housing, a spring coöperating with the roller from which the flexible member is unwound, which spring is wound up during the unwinding movement of said member, and means coöperating with said rollers for governing the rotation thereof during the time the spring is acting to rotate the roller and unwind the flexible member thereupon.

4. In an advertising apparatus of the class described, a housing having an opening, a pair of rollers within the housing, a flexible member arranged to wind from one roller onto the other, which flexible member is adapted to carry detachable advertising cards, means engaging the side edges of the flexible member for intermittently moving the same a distance approximately equal to the width of one of the advertising cards carried by the flexible member so that said advertising cards are successively displayed through the opening in the housing, a spring coöperating with one of the rollers for rewinding the flexible member thereunto after the flexible member has been intermittently wound onto the opposite roller, means for automatically releasing the rewinding spring when the flexible member has been unwound from the roller with which said spring is associated, and an automatic governor for controlling the speed of the spring driven roller during the rewinding of the flexible member thereupon.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 16th day of December, 1912.

GARRETT BROWN.

Witnesses:
M. P. SMITH,
M. A. HANDEL.