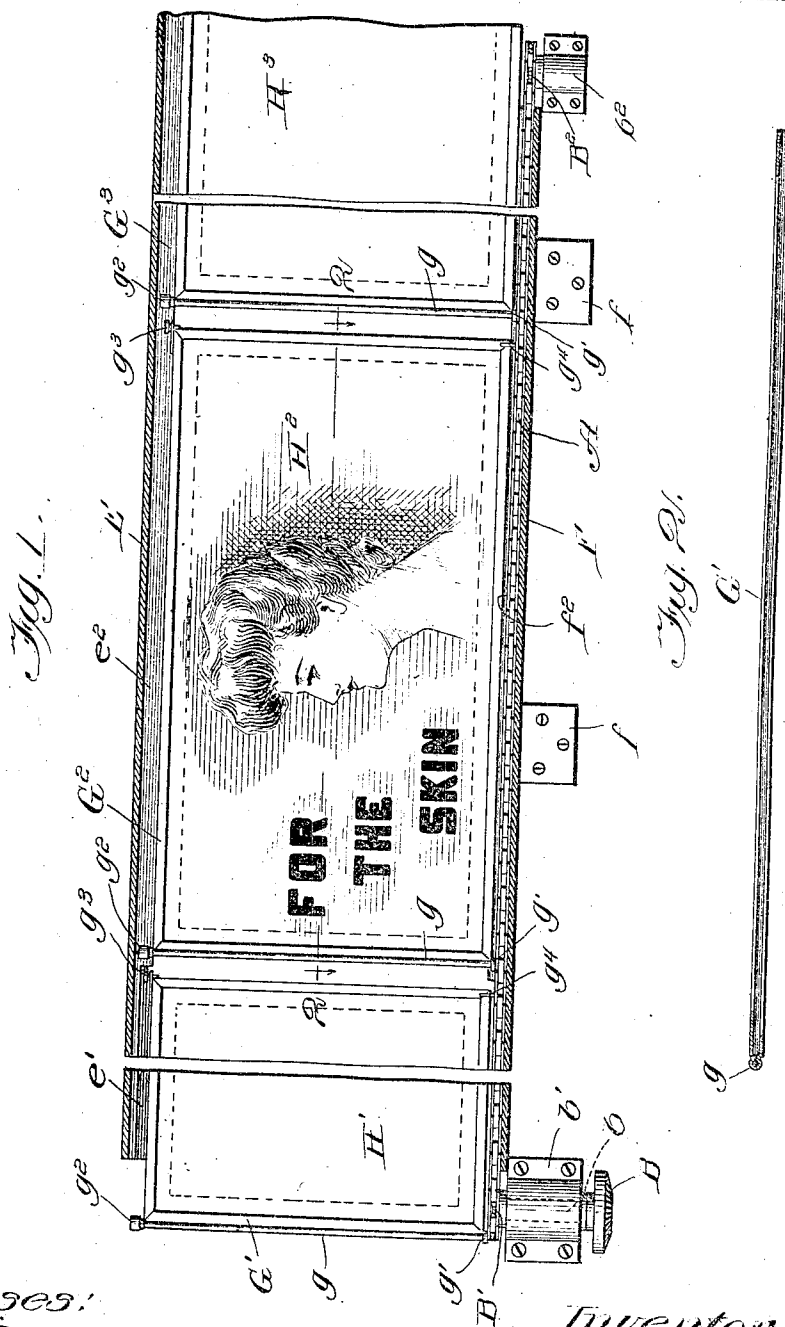


No. 819,673.

PATENTED MAY 1, 1906.

F. L. REYNOLDS.
ADVERTISING APPARATUS.
APPLICATION FILED AUG. 19, 1905.

2 SHEETS--SHEET 1.



Witnesses:

H. B. Ritter

C. A. Mullen

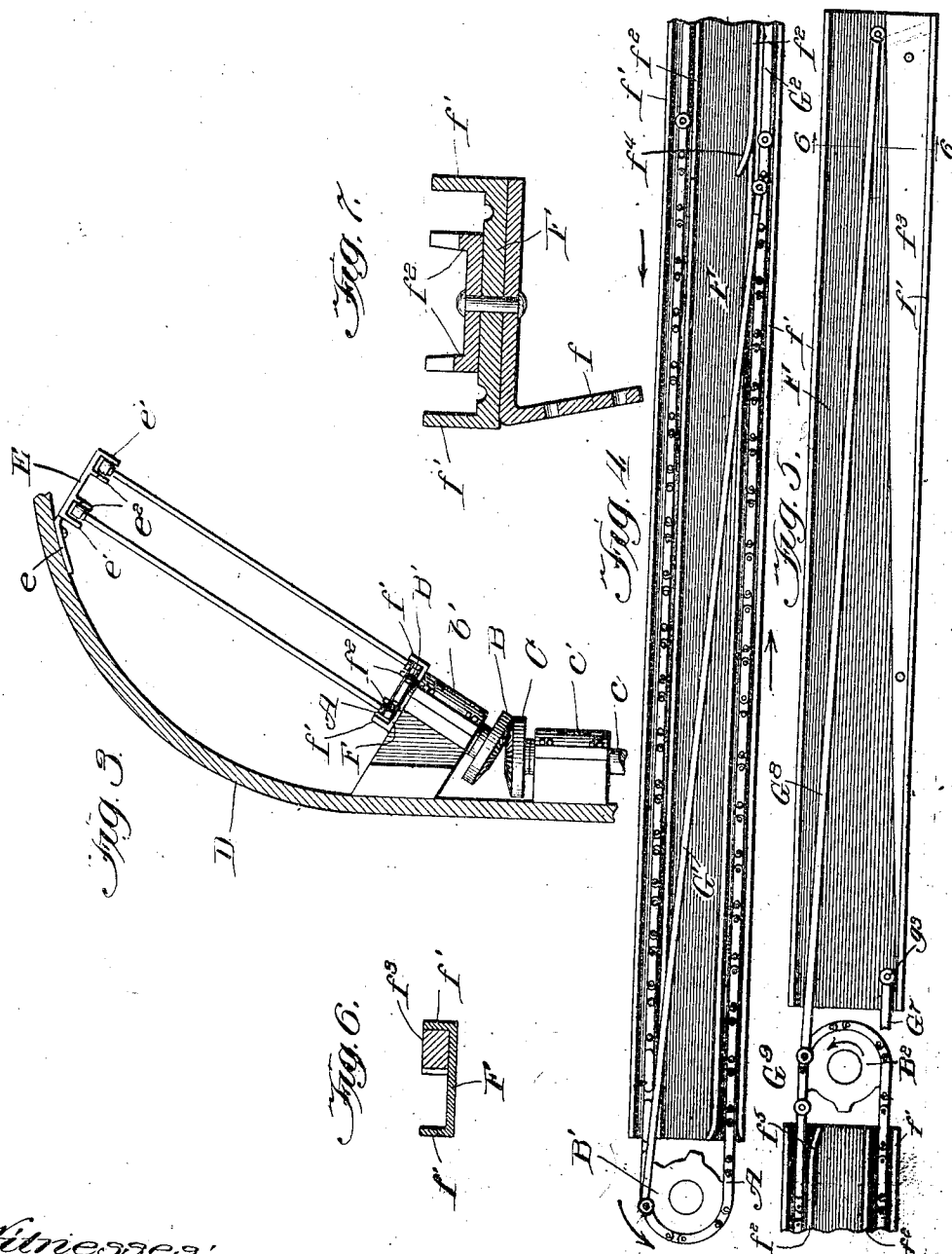
Twentor
 Frederick L. Reynolds
 by Lamborn & Milburn
 attys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FREDERICK L. REYNOLDS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ERNST TIETGENS, OF YOUNGSTOWN, OHIO.

ADVERTISING APPARATUS.

No. 819,673.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed August 19, 1905. Serial No. 274,896.

To all whom it may concern:

Be it known that I, FREDERICK L. REYNOLDS, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Advertising Apparatus; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to advertising, and more particularly to apparatus for continuously moving a series of display-cards.

The available space for displaying advertisements is frequently limited—as, for instance, in street-cars. Consequently it is desirable to increase the capacity of the space by moving the cards on which the advertisements are inscribed. The movement of the advertisements also renders them more efficient, as the eye is more readily attracted to them than to stationary signs.

The primary object of my invention is to provide an apparatus by means of which a series of cards containing advertisements may be continuously moved along a display-space.

A further object of my invention is to provide an apparatus for displaying advertisements which will be simple in construction, inexpensive in manufacture, and efficient in use.

My invention generally described consists of an endless flexible carrier, guide-wheels within the ends of said carrier, means for moving the carrier, open frames adapted to inclose display-cards secured to said carrier, and guides for controlling the positions of the frames during their movement with said carrier.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is an elevational view, parts being shown in section; Fig. 2, a sectional view through one of the frames for surrounding an advertising-card; Fig. 3, a cross-sectional view showing the invention as secured to the usual curved portion of a street-car; Fig. 4, a

plan view of one end of the apparatus; Fig. 5, a plan view of the opposite end to that shown in Fig. 4; Fig. 6, a sectional view on line 6-6, Fig. 5; and Fig. 7, an enlarged sectional view of the guiding structure.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference character A indicates an endless carrier—such, for instance, as a sprocket-chain—adapted to travel around sprocket-wheels B' and B². The sprocket-wheels are secured to any suitable support—such, for instance, as the interior of a street-car above the windows, where it is customary to display advertisements.

b² indicates a bracket upon which the sprocket-wheel B² is journaled, while the sprocket-wheel B' is provided with a stub-shaft b, journaled within a bracket b'. A beveled gear B is secured to the lower end of the stub-shaft b and meshes with a beveled gear C, secured to the upper end of a shaft c, adapted to be driven by any suitable power connection—such, for instance, as the axle of a car or a separate motor.

c' indicates a bracket within which the end of the shaft c adjacent the gear-wheel C is journaled.

Pivottally connected to the sprocket-chain A are open frames G'-G², &c., within which are received cards H' H², &c., upon which advertisements are displayed. The frames may be conveniently constructed as indicated in detail in Fig. 2, in which they are shown as consisting of sheet metal, one side of which is provided with a slot through which the display-card may be inserted and removed. One vertical edge of each of the frames is provided with a tube through which extends a rod g, secured at its lower end to the chain A. The rods g preferably constitute upward extensions of the usual pivot-pins which unite the links of a sprocket-chain. The upper end of each rod g is provided with a roller g², while the opposite upper end of each frame is provided with a roller g³, projecting to a less height above the frame than the roller g². The lower end of each frame below the roller g³ may be provided with a support g⁴.

A guide F is supported beneath the chain A and is provided with outer flanges f' and

inner flanges f^2 , spaced apart to form channels within which the chain travels. The support g^4 on each frame is adapted to rest upon the chain, while the opposite lower end of each frame is supported above the chain by means of a washer g' , surrounding the rod g . A guide E, similar to the guide F, is supported above the upper edges of the series of supporting-frames and is provided with outer depending flanges e' and inner flanges e^2 , spaced apart to form channels within which are guided the rollers g^2 and g^3 on the top edges of each frame. Any suitable means may be provided for supporting the guides E and F—such, for instance, as brackets e and f , secured to a suitable support—such, for instance, as the curved portion D in a car.

The guides may be conveniently constructed as shown in Fig. 7, in which an outer channel-beam has secured within the same a narrower channel-beam, thereby forming flanges spaced apart to afford grooves to receive the chain in the case of the lower guide or to receive the rollers on the frame in the case of the upper guide.

The inner flanges f^2 of the lower guide and e^2 of the upper guide are cut away for a distance from the drivings sprocket-wheel B' slightly greater than the length of the frames for supporting the signs, as shown in Fig. 1 and Fig. 4. The front flange f^2 adjacent the cut-away portion is preferably bent, as shown at f^4 , so as to serve as a guide for successively directing the frames between the front flanges f' and f^2 of the guide.

The upper and lower guides are extended beyond the idle sprocket-wheel B² a distance corresponding to the length of the frames. Such extensions of the guides are, however, provided with no inner flanges, but are provided with wedge-shaped guides f^3 for engaging the rollers g^3 at the upper front corners of the successive frames as the chain passes around the sprocket-wheel.

The operation of my invention is as follows: The upper and lower guides are secured to a suitable support—such, for instance, as the curved portion D of a car. The shaft C is rotated, which rotates the sprocket-wheel B' through the medium of the meshed beveled gears B and C. The chain A is consequently driven and is held taut by the idle sprocket-wheel B². When the chain is driven in the direction of the arrows in Figs. 4 and 5, each frame as the rod g , by means of which it is pivoted to the chain, passes around the sprocket-wheel B' swings by gravity into the position shown at G' in Fig. 4, owing to the inner flanges of the upper and lower guide-grooves being cut away, so that the roller g^3 and support g^4 pass between the reduced inner flanges. As the supporting-rod g passes around the sprocket-wheel B' the guide-roller g^3 and support g^4 are directed by the deflector f^4 into the groove between the front

flanges e' and e^2 of the upper guide and f' and f^2 of the lower guide. The frame is then carried by the chain along the space where the advertisements are to be displayed until the chain passes around the idle sprocket-wheel B². As the portion of the chain adjacent the front edge of each frame passes around the sprocket-wheel B² the frame continues, as indicated at G' in Fig. 5, toward the right and engages the wedge-shaped block f^3 . When the rod g of each frame has passed around the sprocket-wheel B², the frame is drawn past the deflector f^5 into the guide-groove formed between the rear plates or flanges on the guides. The portion of the chain which travels toward the right supports the frames at the rear ends thereof; but after the chain passes around the sprocket B² and travels toward the left the frames are supported at their front edges. The upper guide E is arranged out of vertical alinement with the lower guide F, so that the signs are inclined during their movement with the endless carrier. The guide g^2 at the upper end of each of the rods g , about which the frames which support the signs swing, is of a greater height than the guide g^3 at the opposite upper edge of each sign-supporting frame, so that it will remain in the rear guide-groove, while the reduced inner flanges e^2 permit the guide-roller g^3 to pass from the rear guide to the front guide as the signs successively swing by gravity in passing from the rear guide to the front guide.

From the foregoing description it will be observed that I have invented an improved apparatus for displaying signs by means of which a given space may be utilized for exhibiting twice the number of signs that could be displayed if fixed to such space. In addition to the increased capacity resulting from my improvement the motion imparted to the display-cards attracts attention to them and when applied to the interior of street-cars results in each advertisement being carried in front of each occupant of the car, thereby greatly increasing the value of the advertising-space.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, and inclined signs each pivotally connected at one end to said carrier.

2. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, and inclined inflexible display-surfaces each pivotally connected at one end to said carrier.

3. In an advertising apparatus, the combination with a flexible endless carrier, of guides

around which said carrier travels, means for driving said carrier, inclined inflexible open frames each pivotally connected at one end to said carrier, and display-cards inclosed within said frames.

4. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs each pivotally connected at one end to said carrier, and guides for controlling the positions of said signs during their movement with said carrier.

5. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs each pivotally connected at one end to said carrier, grooved guides located above and below said signs, and projections carried by said signs engaging the grooves in said guides.

6. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs located above and each pivotally connected at one end of its lower edge to said carrier, and guides located above said signs for controlling their positions during their movement with said carrier.

7. In an advertising apparatus, the combination with an endless sprocket-chain, of sprocket-wheels engaged by said chain, means for driving said chain, and inclined inflexible signs each pivotally connected at one end to said chain.

8. In an advertising apparatus, the combination with an endless sprocket-chain, of sprocket-wheels engaged by said chain, means for driving said chain, inclined open rigid frames each pivotally connected at one end to said chain, and display-cards inclosed by said frames.

9. In an advertising apparatus, the combination with a sprocket-chain, of guides for said chain, rods secured to and projecting above predetermined links in said chain, and inclined signs each pivotally secured at one end to one of said rods.

10. In an advertising apparatus, the combination with a flexible endless carrier, of rotary guides around which said carrier trav-

els, inclined rigid signs each pivotally connected at one end to said carrier, parallel flanges forming front and rear guides above and below said signs, the inner flanges of the guides being cut away adjacent one end thereof to permit the signs swinging by gravity from the rear guide to the front guide as the carrier passes around its adjacent rotary guide, and means located beyond the opposite rotary guide for said carrier for directing each sign from the front to the rear guide as the carrier passes around such rotary guide.

11. In an advertising apparatus, the combination with a sprocket-chain, of sprocket-wheels around which said chain travels, means for driving said chain, inclined rigid signs each pivotally connected to said chain at one of its lower edges, parallel flanges forming front and rear guides below said signs within which said sprocket-chain travels, the inner flanges of said guides being cut away adjacent one sprocket-wheel to permit the signs swinging by gravity from the rear guide to the front guide as the carrier passes around said sprocket-wheel, and means located beyond the opposite sprocket-wheel for directing each sign from the front to the rear guide as the chain passes around said sprocket-wheel.

12. In an advertising apparatus, the combination with a sprocket-chain, of sprocket-wheels around which said chain travels, means for driving said chain, inclined rigid signs each pivotally connected at one end to said sprocket-chain, parallel flanges forming front and rear guides above and below said signs, a projection in line with the axes of each sign engaging the upper guides, a shorter projection on the opposite end of each sign engaging said guides, the inner flanges of said guides being reduced in height to permit the shorter projections on the signs to pass between the same and the signs thereby swing by gravity from the rear guide to the front guide as the chain changes its direction of movement.

In testimony whereof I sign this specification in the presence of two witnesses.

FREDERICK L. REYNOLDS.

Witnesses:

GEO. L. WILKINSON,
C. A. MULLEN.