

No. 641,702.

Patented Jan. 23, 1900.

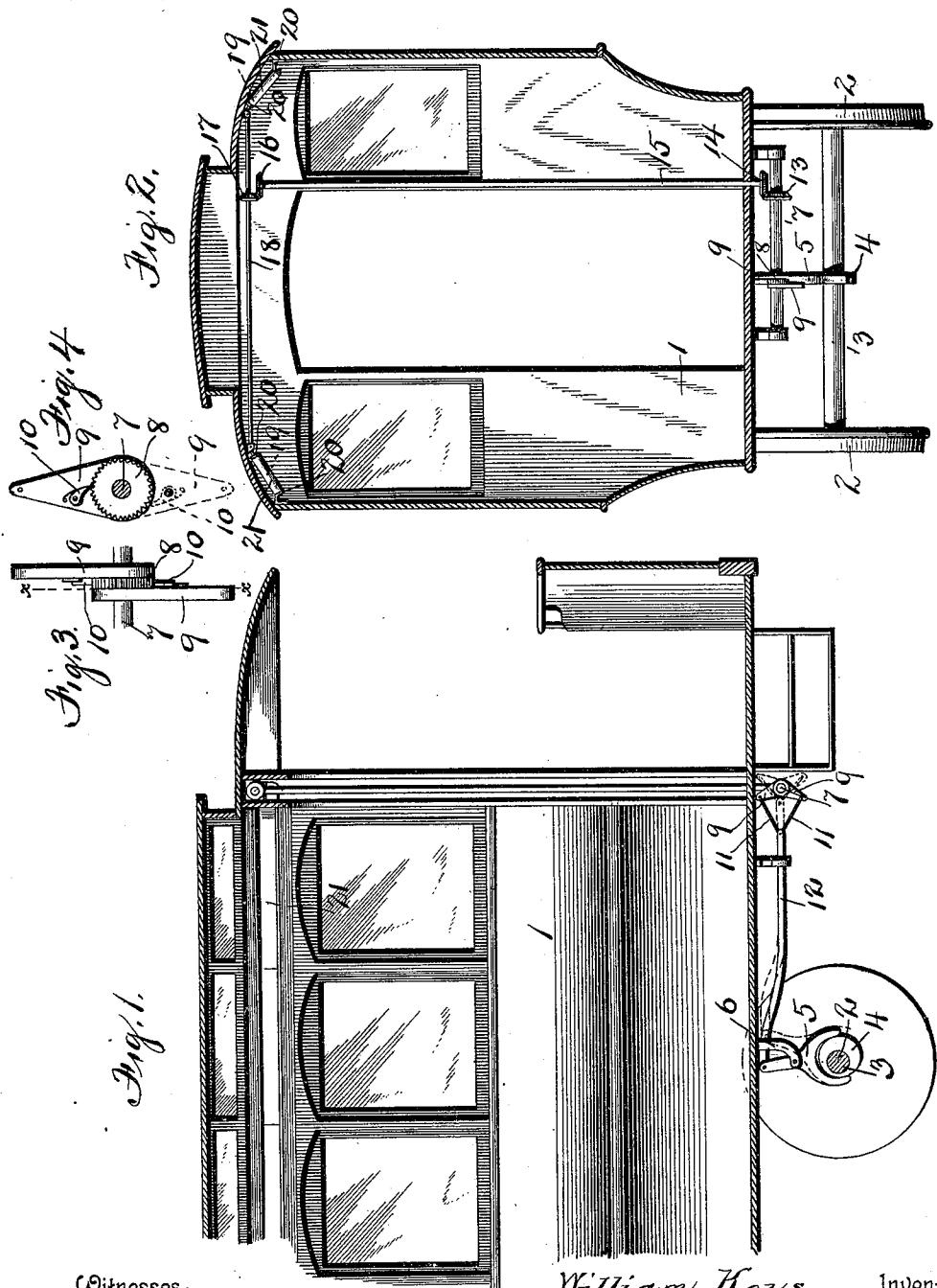
W. KEYS.

CAR ADVERTISING DEVICE.

(Application filed Nov. 17, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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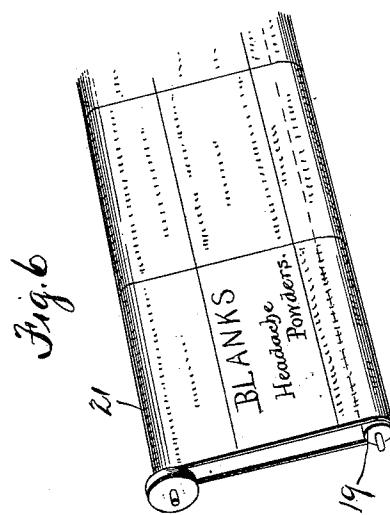
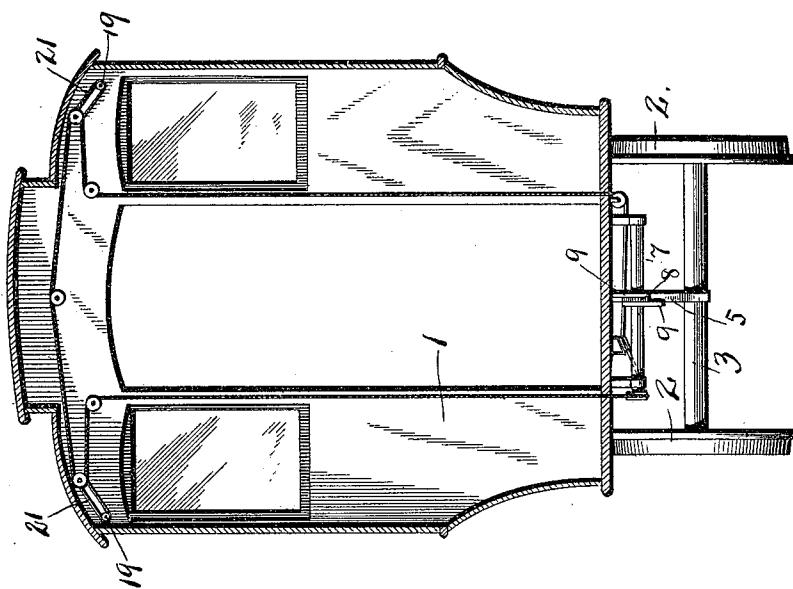


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM KEYS, OF MONTREAL, CANADA.

CAR ADVERTISING DEVICE.

SPECIFICATION forming part of Letters Patent No. 641,702, dated January 23, 1900.

Application filed November 17, 1898. Serial No. 696,697. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KEYS, a subject of Her Majesty the Queen of Great Britain, residing in the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Car Advertising Devices; and I 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.

My invention relates to improvements in car advertising devices, and has particular relation to devices of this character used in connection with street-cars.

One object of my invention is to provide a device of this character in which an endless band located within the car-body is given an intermittent movement, the operating means being actuated by the movement of the car.

A further object is to impart a movement to the advertisement-carrying belt in one direction regardless of the direction of movement of the car.

25 A further object is to provide a mechanism by means of which the belt or band carrying the advertisements is given a vertical movement within the car, the motion being either intermittent or continuous.

30 A further object is to provide a device which is neat and attractive in appearance, simple and automatic in its operation, durable in construction, and which can be manufactured and placed in position at a moderate cost.

35 To these ends my invention consists in the improved construction and combination of parts, hereinafter fully described, and particularly pointed out in the appended claim.

In the drawings, in which similar numerals 40 of reference indicate similar parts in all of the views, Figure 1 is a longitudinal section of a car, showing my improved mechanism in position. Fig. 2 is a vertical cross-section of the same. Fig. 3 is an elevation of the 45 ratchet mechanism used for transmitting the movement to the band-operating mechanism. Fig. 4 is a sectional view of the same, taken on the line $z-z$ of Fig. 3. Fig. 5 is a sectional view similar to that shown in Fig. 2, showing

50 a modified arrangement of power-transmitting mechanism and also showing the arrangement used with a vertically-moving band. Fig. 6 is a detail of the band and its

supporting-rollers used in the construction shown in Fig. 5.

55 In street-car advertising devices as used at the present time the most generally used form consists in simply placing the advertising-cards within the body of the car, generally above the windows. Other forms have been 60 provided, however, consisting in placing the advertisements on an endless band and placing connections to said band operatively connected to the car-axle, by which the band is given a longitudinal movement through the 65 car, which movement is continuous as long as the car is moving. These bands have generally been so arranged as to change the direction of movement as the direction of movement of the car is changed; but this has 70 proved disadvantageous in the fact that it makes the advertisement difficult to read when it is traveling in a direction contrary to the ordinary manner of reading. Attempts have been made to provide a construction 75 which will travel in but one direction, regardless of the movement of the car; but these have been unsuccessful, inasmuch as the band would not have a continuous movement when the car was running in opposite directions, 80 the band having a movement during the movement of the car in one direction, but remaining stationary when moving in the opposite direction, the construction not allowing of a continuous movement. It is my purpose to provide a construction in which these 85 disadvantages disappear and in which the band will have a continuous movement in one direction, either longitudinally or vertically within the car, regardless of the direction of 90 movement of the car. In addition to this the construction provided permits of an intermittent or step-by-step movement of the band, the rapidity of which may be readily varied, thus allowing the advertisements to have regular periods of momentary rest, allowing of 95 their being easily read. These objects and purposes are attained by the construction now to be described.

1 designates the car-body, of any preferred 100 form, having the usual truck-body, on which are mounted the wheels 2. The axle 3 of one of the sets of wheels is provided with an eccentrically-mounted cam 4, which is adapted to impart an oscillatory movement to a lever 105 5, pivotally mounted in a bracket 6, secured

to the under part of the car-body. As the lever 5 is operatively connected with, but not fixedly secured to, the cam 4, it will be apparent that the said cam will operate the lever 5 regardless of the swaying of the car-body, and thus allow of the continued operation of the device.

7 designates a shaft mounted transversely of the car, on which is fixedly secured a suitable ratchet-wheel 8. Loosely mounted on the shaft 7, on opposite sides of the ratchet-wheel 8, are arms 9, on each of which is arranged a spring-pressed pawl 10, adapted to contact with the teeth of the ratchet-wheel 8, the pawls being arranged to contact with the teeth of the ratchet-wheel on opposite sides of its face. The ends of the arms 9 are connected by means of suitable rods 11, 11 with the front end of a rod 12, the rear end of which is pivotally connected to the free end of the lever 5, as best shown in Fig. 1. By this construction it will be readily seen that as the axle is rotated by the movement of the car the cam 4 will oscillate the lever 5, the movement of the lever 5 being communicated to the arms 9 by means of the rods 12, 11, both arms 9 moving in the same direction either forward or backward, regardless of the direction of movement of the shaft 7. This movement of the arms 9 imparts a movement to the ratchet-wheel by means of the pawls 10, the pawls being arranged to give movement to the shaft alternately, one pawl serving to drive the shaft 7 during the forward movement of the arm 9, the opposite pawl imparting a movement to the shaft on the return movement of the arm, but one of the pawls being in operative connection with the teeth of the ratchet-wheel at a time, the non-operating pawl passing freely over the teeth until the arms 9 have reached their limit of movement, when the positions of the pawls are reversed, the non-operating pawl becoming the operating one. By this means the oscillatory movement of the lever 5 and the reciprocating movement of the rod 12 is converted into a rotary movement of the shaft 7, giving the shaft a continuous or intermittent motion, as may be desired, but in one direction only. The changing of the direction of movement of the car itself would have no effect whatever on the movement of the lever 5, the motion of the latter remaining the same, regardless of the direction of movement of the cam 4.

55 It will be apparent that by varying the size of the cam 4 the speed of the revolutions of the shaft relative to the movement of the axle can be regulated, while by modifying the shape of the cam 4 the lever 5 may be caused 60 to have momentary periods of rest, the periods being regulated by the cam in an obvious manner.

As shown in Figs. 1 and 2, the shaft 7 is provided with a suitable bevel-gear 13, which 65 is adapted to mesh with a similar gear 14, secured on the lower end of a vertical shaft 15, mounted in the end of the car and extending

upward a suitable distance, the upper end of said shaft being provided with a bevel-gear 16, adapted to mesh with a similar gear 17, 70 mounted on a transverse shaft 18, mounted in the upper end of the car. The outer ends of the shaft 18 are operatively connected to a roller 19, mounted in bearings 20, and preferably inclined as shown in the drawings, the 75 connection between said shaft 18 and the rollers 19 being made in any suitable manner—such as by a skew-gear, bevel-gear, universal joint, &c.—the most practical form being used. In this form of device the endless band 80 21, containing the advertisements, moves longitudinally of the car, being mounted on the roller 19 and on a similar roller located at the opposite end of the car. Suitable moldings, &c., are provided to make the device appear 85 attractive to the reader of the advertisement. In the mechanism shown in Fig. 5, however, the rollers are driven in a different manner, the vertical shaft 15 and the transverse shaft 18 being dispensed with, the band 21 being 90 driven by means of the belt 22, mounted in the manner shown, the belt being a continuous one and passing over various pulleys to operate the two bands 21. In this figure is also shown a construction in which the endless band is moved vertically instead of longitudinally of the car, the supporting-rollers being mounted longitudinally instead of vertically.

While I have shown and described but one 100 general form of construction for carrying my objects into effect, I do not limit myself to such precise construction and combination of parts, but reserve the right to use any and all modifications and minor changes of parts 105 in so far as said modifications and changes may fall within the spirit and scope of my invention, as set forth in the accompanying claim, forming part of this specification.

Having thus described my invention, what 110 I claim as new is—

In a car advertising device, the combination with the car and its truck; of the cam 4 mounted on one of the axles of said truck and deriving its movement therefrom; the bifurcated lever 5, actuated by said cam; the rod 12; the shaft 7; the ratchet-wheel 8; the oscillating arms 9, each having the spring-actuated pawl 10, each pawl being adapted to have a contact with said ratchet-wheel; 110 the arms 11, connecting the rod 12 with the arms 9; the endless band 21, having a movement within the car; and operating connections between the shaft 7 and said band 21, the whole arranged to impart a movement to 115 the band 21 in one direction, regardless of the direction of movement of the car, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM KEYS.

Witnesses:

J. A. MARION,
HORACE G. SEITZ.