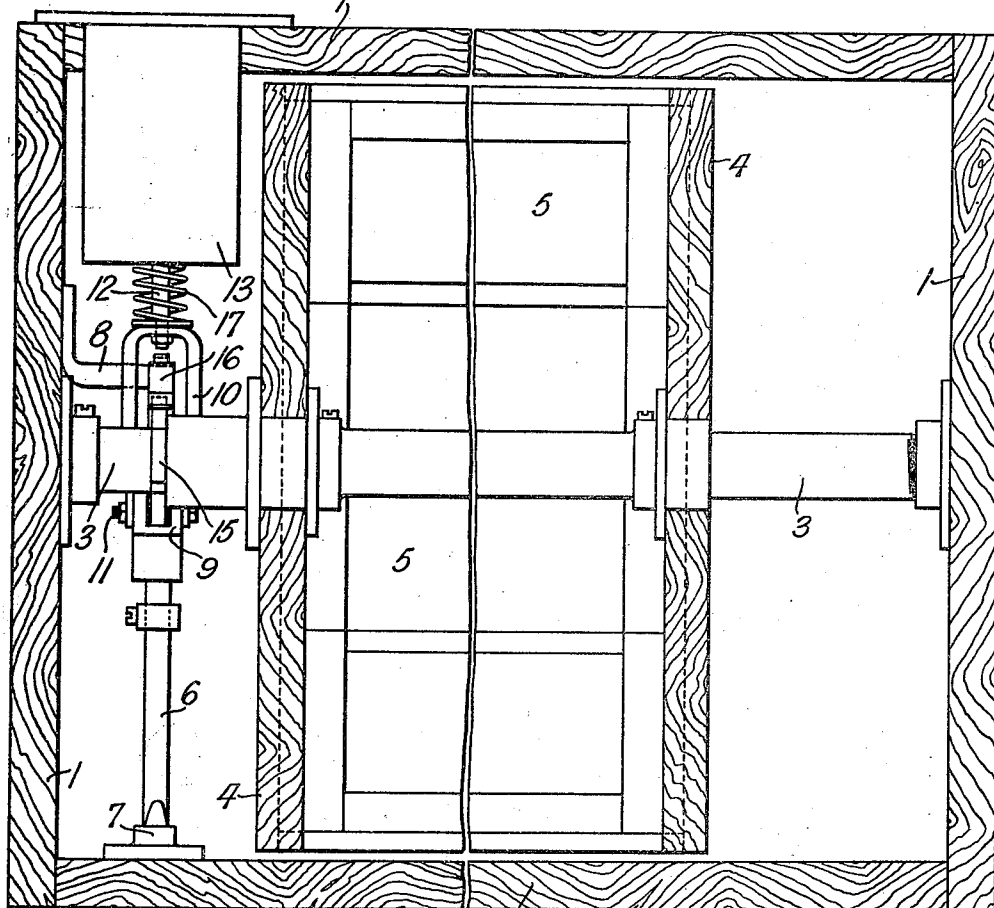


A. H. JACKSON.
ADVERTISING DEVICE.
APPLICATION FILED APR. 22, 1922.

1,435,474.

Patented Nov. 14, 1922.
3 SHEETS—SHEET 1.

Fig. 1.



INVENTOR

ALBERT HENRY JACKSON

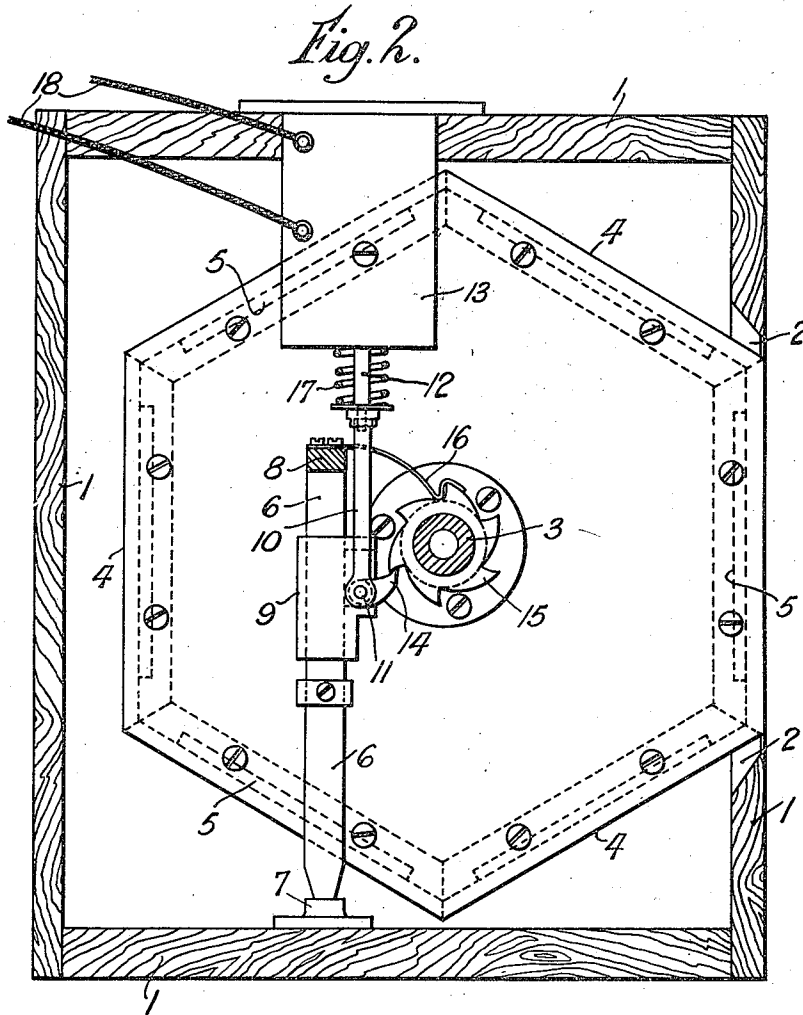
By his Attorneys

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 ALBERT HENRY JACKSON

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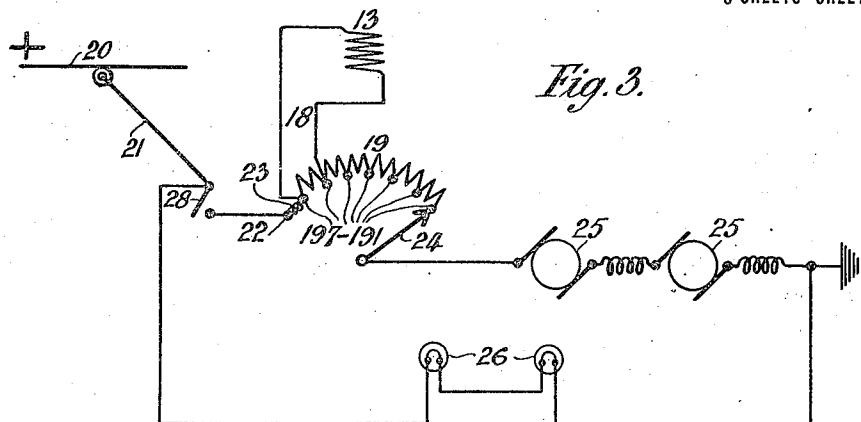
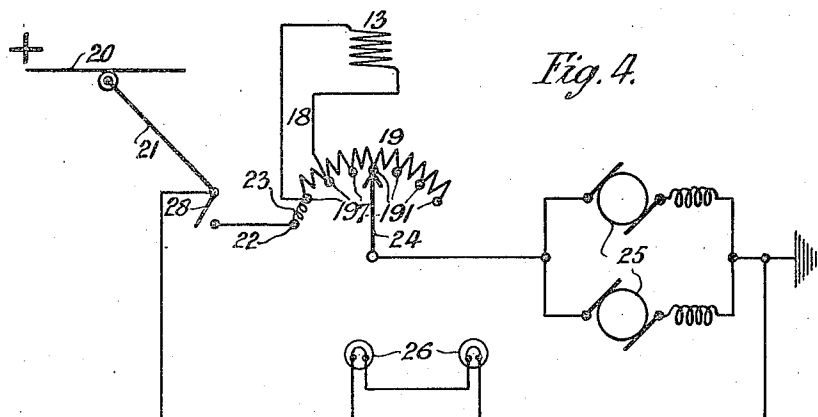
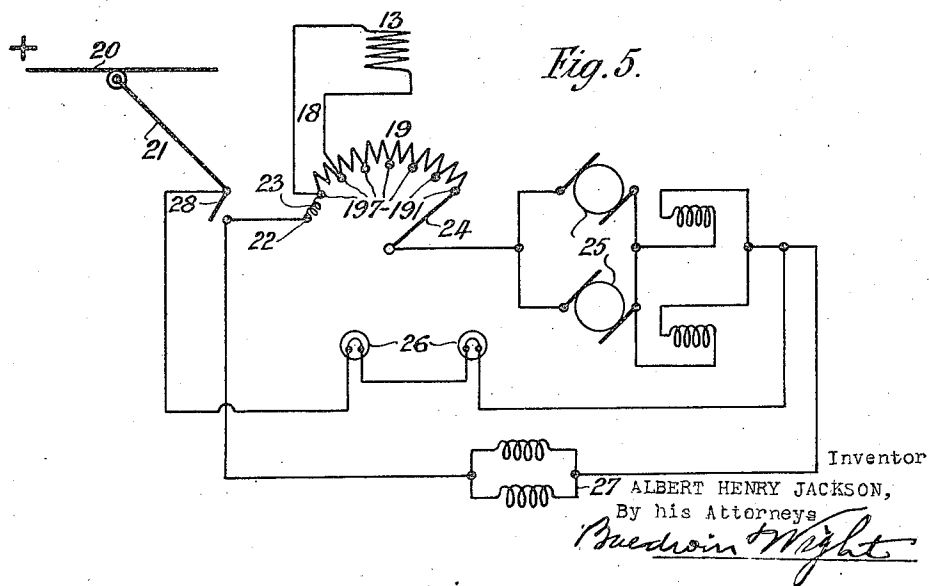
Bledsoe Wright

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3 SHEETS—SHEET 3.



Inventor

27 ALBERT HENRY JACKSON,
By his Attorneys
Boedwin Wright

UNITED STATES PATENT OFFICE.

ALBERT HENRY JACKSON, OF LONDON, ENGLAND.

ADVERTISING DEVICE.

Application filed April 22, 1922. Serial No. 556,118.

To all whom it may concern:

Be it known that I, ALBERT HENRY JACKSON, a subject of the King of Great Britain, residing at "Lamorna," Woodlands Villas, Muswell Hill Road, London, England, have invented new and useful Improvements in Advertising Devices, of which the following is a specification.

This invention relates to moving advertising devices for use upon or in connection with electrically propelled vehicles, and has for its object the provision of means whereby such devices may be intermittently actuated in accordance with interruptions or variations of the current flowing in the circuit of the propelling motor or motors of the vehicle. It is an essential feature of the invention that the advertisements can be changed at irregular intervals which may depend upon the exigencies of traffic, in contradistinction to their being changed at regular, fixed, or predetermined intervals or places as is usually the case. In the present invention the device is so constructed that there occurs an actuation of the mechanism for changing the advertisements whenever the current is varied to a given extent or is interrupted.

The invention is applicable to all types of moving advertisements in which the motion is capable of mechanical production, but I find it convenient in practice to apply it either to that type of advertising device in which a rotary prism or polygonal drum or a disk is intermittently rotated to exhibit a series of advertisements displayed upon or through its various faces or sections, or to that type of advertising device in which a flexible screen carrying a series of advertisements passes over a rotating roller or rollers.

In carrying out the invention I may conveniently employ an electro-magnet or solenoid the energizing coil of which is connected in the circuit of the propelling motors the moving armature or core of the electro-magnet or solenoid being connected to suitable mechanism adapted to transmit motion to the advertising device. Said mechanism may be of any convenient type but I prefer to employ a ratchet and pawl mechanism having a propelling pawl connected to the core of a solenoid, the pawl serving to drive a toothed wheel connected to the moving advertisement.

is de-energized, is returned to its original position either by gravity or through the action of a spring.

When current flows in the circuit of the propelling motors the solenoid is energized and its core moves the propelling pawl which imparts a portion of a revolution to the toothed wheel. When the current in the motor circuit is interrupted or sufficiently reduced the core of the solenoid moves back to its original position carrying with it the pawl in readiness for further actuation of the toothed wheel. It will thus be seen that successive operations of supplying and reducing or cutting off current to the motors of the vehicle result in the intermittent rotation of the toothed wheel and consequent progressive actuation of the advertising device.

It will further be apparent that complete interruption of the motor circuit at intervals is not essential to the operation of the device but that by suitable arrangement of the solenoid or electro-magnet the device may be actuated by variations in strength of the current flowing in the motor circuit.

In the accompanying drawings which illustrate the invention as applied to an electrically driven tram car Figure 1 is a front elevation partly in section, Figure 2 is an end view partly in section, and Figures 3, 4 and 5 are diagrams showing the wiring connections.

1 is a frame having in its front an opening 2. Rotatably mounted in bearings on the ends of the frame 1 is a shaft 3 fast with which is a hexagonal prism or drum 4 each side of which comprises a frame-work containing a sheet of glass 5 on which an advertisement or transparency can be mounted. 6 is a guide, the lower end of which is screwed into a socket 7 fixed to the bottom of the frame whilst the upper end of the guide 6 is flanged to form a bracket 8 which is fixed to one end of the frame 1. Slidably mounted on the guide 6 is a cross head 9 to which a stirrup 10 is connected at its lower end by a pin 11. The upper end of the stirrup 10 is fixed to the core 12 of a solenoid 13 which is fixed to the top of the frame 1. Pivotally mounted on the pin 11 is a pawl 14 adapted to engage a ratchet 15 fast on the shaft 3. The ratchet wheel has as many teeth as there are sides to the drum 4, in this instance six. 16 is a spring

catch mounted on the guide 6 and adapted to engage any one of the teeth of the ratchet wheel 15. 17 is a spring which normally keeps the core 12 in its outward position. 18 are leads connected in the circuit of the vehicle motors in shunt across a section of the car rheostat.

19, as shown in Figures 3, 4 and 5, in which 20 shows an overhead wire supplied with current, 21 a trolley pole leading current to a terminal 22 connected by a "blow out" coil 23 to the rheostat 19. 24 is a controller handle which when moved over the various power notches on the controller engages contacts 191, 192, 193, 194, 195, 196 and 197, cutting out more and more of the resistance. 25 are motors by which the vehicle is driven. The solenoid 13 is connected to the contacts 196, 197, so as to be in shunt with the last section of the rheostat 19. 26 are lamps arranged inside the drum 4 and adapted to illuminate the advertisement which is being displayed, the lamps being connected in shunt with the power circuit 27 is a magnetic brake. The motors 25 are so connected to the controller handle 24 that at starting they are in series as shown in Figure 3 and afterwards in parallel as shown in Figure 4. 28 is a line switch.

In operation the controller handle when on the first power notch engages the contact 191 as shown in Figure 3, the whole of the resistance is in and consequently the solenoid is energized, the core 12 is drawn upwards and the pawl 14 which is connected thereto by the stirrup 10 engages with a tooth of the ratchet wheel 15 and turns this latter and with it the drum 4 for one-sixth of a revolution so that a fresh advertisement is displayed in the opening 2. When the controller handle is moved to the second power notch it engages the contact 193 cutting out some of the resistance, the solenoid 13 remains energized and consequently no movement of the drum 4 occurs. When the controller handle 24 is moved to the third power notch it engages the contact 195 cutting out more of the resistance, the solenoid 13 still remains energized and no movement of the drum 4 takes place. When the controller handle 24 is moved to the fourth power notch it engages the contact 197 and the whole of the resistance 19 is cut out, consequently the solenoid 13 ceases to be energized and the core 12 is moved back to its original position as shown in Figures 1 and 2 and the pawl 14 is ready to engage another tooth of the ratchet wheel 15. When the controller handle is moved to the fifth power notch it engages the contact 194, some of the resistance is now in and the solenoid 13 is again energized and the drum 4 is moved by the pawl 14 so that the advertisement is changed for the second time. When the controller handle 24 is moved to

the sixth and seventh power notches, it engages the contacts 195 and 196 respectively cutting out more resistance, the solenoid 13 remaining energized so that no movement of the core 12 takes place. When the controller handle is moved to the eighth power notch the whole of the resistance is cut out, the solenoid 13 ceases to be energized, and the core 12 is moved back to its original position, the pawl 14 being then ready to engage another tooth of the ratchet wheel 15. When the controller handle is moved to the first brake notch as shown in Figure 5 it engages the contact 191 so that the whole of the resistance is in and the solenoid is again energized and the drum 4 moved by the pawl 14 and the advertisement is changed for the third time. As the controller handle is moved to the second, third, fourth, fifth, and sixth brake notches it engages in succession the contacts 192, 193, 194, 195, and 196, the resistance being gradually cut out, the solenoid remains energized and consequently there is no movement of the core 12 and drum 4. When the controller handle is moved to the seventh power notch, it engages the contact 197, and the whole of the resistance is cut out; the solenoid 12 ceases to be energized and the core 12 is moved back to its original position and the pawl 14 is ready to engage another tooth of the ratchet wheel 15.

Thus, in a normal operation of switching on power to full speed and subsequently bringing the car to rest again by means of the electric brake, three actuations of the advertising device will be effected.

Preferably the solenoid 13 is so set and adjusted that its core 12 is actuated when a current of a certain predetermined strength flows in the circuit of the vehicle motor; the core 12 will then drop whenever the strength of the current falls below this value, and the core 12 will be raised and the advertisement changed whenever the strength of the current exceeds this value.

It is to be understood that the showing in Figures 3, 4 and 5 is merely illustrative and that the invention is not limited to any particular type of electric controlling mechanism or electric brake.

What I claim is:—

1. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, means actuated by a variation in the strength of the current flowing in the circuit of the vehicle motor, and means operated by said first-named means for changing the advertisement.

2. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of an electromagnet actuated by a variation in the

strength of the current flowing in the circuit of the vehicle motor and means actuated by said electro-magnet and adapted to impart intermittent motion to the advertising device.

3. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of an electro-magnet, the strength of which is altered by a variation in the strength of the current flowing in the circuit of the vehicle motor, an armature actuated by said electro-magnet and mechanism actuated by the armature and adapted to impart intermittent motion to the advertising device.

4. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of an electro-magnet, the strength of which is altered by a variation in the strength of the current flowing in the circuit of the vehicle motor, an armature actuated by said electro-magnet, and a pawl connected to the armature and adapted to impart intermittent motion to the advertising device.

5. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of a drum and means actuated by a variation in the strength of the current flowing in the circuit of the vehicle motor for imparting intermittent rotation to the drum.

6. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of a drum, an electro-magnet actuated by a variation in the strength of the current flowing in the circuit of the vehicle motor and means actuated by said electro-magnet and adapted to impart intermittent rotation to the drum.

7. In an advertising device for use upon

an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of a drum, an electro-magnet the strength of which is altered by a variation in the strength of the current flowing in the circuit of the vehicle motor, an armature actuated by said electro-magnet and mechanism actuated by the armature and adapted to impart intermittent motion to the drum.

8. In an advertising device for use upon an electrically propelled vehicle and adapted to display any one of a plurality of advertisements, the combination of a drum, an electro-magnet the strength of which is altered by a variation in the strength of the current flowing in the circuit of the vehicle motor, an armature actuated by said electro-magnet and a pawl actuated by the armature and adapted to impart intermittent motion to the drum.

9. In an advertising device for use upon an electrically propelled vehicle, the combination of a polygonal drum having a plurality of advertisements thereon and means actuated by a variation in the strength of the current flowing in the circuit of the vehicle motor for imparting intermittent rotation to the drum.

10. In an advertising device for use upon an electrically propelled vehicle, the combination of a polygonal drum having a plurality of advertisements thereon, a ratchet wheel fast with the drum, an electro-magnet actuated by a variation in the strength of the current flowing in the circuit of the vehicle motor, an armature actuated by the electro-magnet, a guide, a cross head, a stirrup connected to said guide and to the armature, and a pawl on said stirrup adapted to engage the ratchet wheel.

In testimony that I claim the foregoing as my invention I have signed my name this 7th day of April, 1922.

ALBERT HENRY JACKSON.