

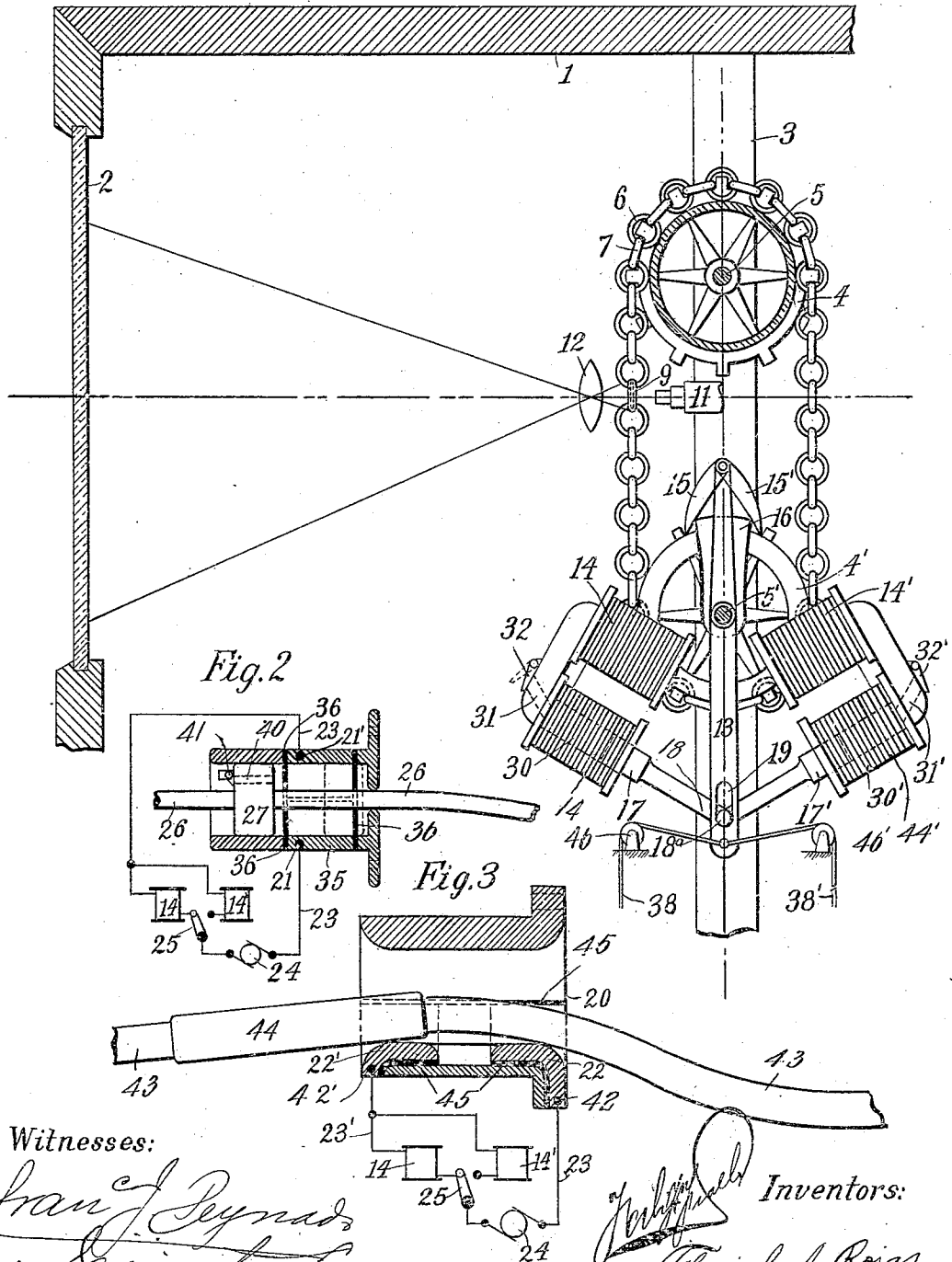
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PROJECTING APPARATUS.

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Fig. 1



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To all whom it may concern:

Be it known that we, FABIO F. FIALLO and FLORICEL A. ROJAS, citizens of the Republic of Santo Domingo, and residing in the borough of Manhattan, city, county, and State of New York, have invented a certain new and useful Improvement in Projecting Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to projecting apparatus used either to project advertising matter, or preferably the name of the next station to be reached by a passenger train. Subject matter may be projected onto a screen or translucent plate.

We have illustrated in the accompanying drawings, as an example how our invention may be reduced to practice and how the apparatus may be particularly adapted to use for announcing railroad stations, it being understood thereby that the apparatus illustrated be installed in the railroad car.

Referring to the drawings, Figure 1 is a side elevation view of our device. Fig. 2 is a contact device used in connection with a retaining mechanism, partly shown in section. Fig. 3 is a modification thereof partially shown in section.

Referring more particularly to the drawings, 1 represents a box containing the apparatus and used in connection with a translucent plate or frosted glass 2, situated in the front side of said box; 3 represents posts or standards in which the sprocket wheels 4, 4' are mounted through the axles 5, 5', one pair of sprocket wheels being mounted on each axle. These sprocket wheels operate in conjunction with the chains 6, between the links of which are mounted card holders 7, made of any suitable design. The card contained in such card holder is transparent and has printed thereon any suitable matter, such as the names of stations or advertising matter.

11 represents a lantern or source of light, adapted to shine through the card 9, carrying the outline of the contents of such card through the lens 12, onto the screen 2.

13 represents an armature capable of being operated by either of the magnets 14, or 14'. On the upper end of the armature which extends beyond the periphery of the

lower sprocket wheel, are loosely pivoted pawls 15, 15'. These pawls are shown resting on the shield 16. This shield is mounted on the pivot 5' of the sprocket wheel 4' and is adapted to cooperate with the end of the pawls, preventing the inoperative pawl from coming in contact with the teeth of the sprocket, as same is rotated by the movement of the armature 13. One leg of the magnets 14 and 14' is preferably provided with the plungers 17, 17' respectively. The ends 18 of these plungers are loosely connected at their ends by a stud 18^a, adapted to reciprocate in the slot, 19. The opposite ends of these plungers reciprocate in the core tubes 30, 30' of the magnets, shown in dotted lines, which communicate with the atmosphere through the ports 31, 31'. 32, 32' are valves of any suitable construction adapted to open and close the respective ports 31 and 31' and normally held in closed position by gravity. These valves are adapted by holes of suitable size to regulate the amount of air to be admitted slowly into the magnet core tubes, 30 and 30', when plungers 17, 17' are withdrawn on return of armature 13 to their normal position by gravity or other suitable means. The object of this device is to cause the armature 13 to return slowly into its normal position, for if the contact to be described later closing the energizing current should be made by mistake several times in short succession the armature would make its full stroke the same number of times if it could return freely to its normal position and consequently pawls 15 or 15' would move with each armature stroke the sprocket wheel one tooth farther and cause thus more cards to pass the lantern than intended by the operator.

In Fig. 2 we have shown a contact breaking mechanism adapted to be used in connection with this projecting device. In this figure 26 represents a bell rope upon which is mounted the piston 27, made of conducting material, having the port 40 and the valve 41 of any suitable construction. That part of the casing marked 35 is connected with the source of power 24 through the conductors 23, and the terminals 21, 21'. 36 is an insulation made of any suitable material and divides the part of casing 35 to which

the conductors 23 are attached into two isolated sections as is shown partly by dotted lines. It will now be readily seen that upon the pull of the rope 26, the piston 27 will be drawn past the insulation material, 36 and make connection with the terminals 21, 21', and thus put into circuit the magnet 14. Upon releasing the bell rope the piston 27 will slowly fall back to the position shown in Fig. 2 by gravity. The object of having this piston slow-acting is for the purpose of allowing the bell rope to be pulled any number of times without making and breaking contact with each pull of the rope.

In Fig. 3 is shown a modification for electrically operating the card carrying chain. In this 20 represents a bell rope holder of a car, which holder is preferably situated over the door, but may be placed in any other convenient part of the car. The sections 22 and 22' are insulated by suitable material 45 from the main part of the rope holder 20 and are connected with conductors 23 by binding posts 42, 42'. The other connections with the magnets and the source of power are those as described in Fig. 2.

43 represents a bell rope to which is attached in any convenient manner the contact piece 44, which is made of any suitable conducting material.

It will now be readily seen that upon the pulling of the bell rope of the car, the contact piece 44, will put in circuit the magnet 14. This magnet 14 being energized, it will attract the armature 13, which in turn will draw the pawl 15', move the sprocket wheel 4' one space which operates on the chain 6, and moves the same one station. When the car has reached the end of its route, the magnet 14 is drawn out of circuit and the magnet 14' put into circuit by the manipulation of the switch 25. Now it will readily be seen that upon pulling the bell rope, the magnet 14' will attract the armature 13, and the sprocket wheel 4' will be moved in the opposite direction. It will thus be seen that the carrying chain 6, may be operated in either direction, and the names of the stations projected onto the plate 2, in the desired order.

In case it is desired to operate this mechanism by hand, the armature 13 may have attached to it the ropes 38, 38' suitably guided over pulleys 46, 46' and another attached to the bell rope or be independent thereof. Upon the pulling of the rope 38 it will be seen the sprocket wheels 4, 4' and the card carrying chain 6 will be moved in one direction, while upon the pulling of rope 38' the same will be moved in the opposite direction as is desired.

While we have shown in the drawings two contact devices any other suitable contact device may be employed to control the mag-

nets without departing from the spirit of our invention.

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

1. In a projecting apparatus, the combination of transparent slides, a screen and a lantern adapted to project said slides on said screen, an armature adapted to move said slides step by step past said lantern, an electro-magnet operating said armature, means for retarding the return motion of said armature to its normal position and means for controlling the energizing of said electro-magnet.

2. In a projecting apparatus, the combination of transparent slides, a screen and a lantern adapted to project said slides on said screen, an armature adapted to move said slides step by step past said lantern and having a plunger suitably pivoted thereto, an electro-magnet operating said armature and having a core-tube adapted to receive said plunger, means for retarding the return of said plunger to its normal position, and means controlling the energizing of said electro-magnet.

3. In a projecting apparatus, the combination of transparent slides, a screen and a lantern adapted to project said slides on said screen, an armature adapted to move said slides step by step past said lantern and having a plunger suitably pivoted thereto, an electro-magnet operating said armature and having a core-tube adapted to receive said plunger, a valve suitably mounted on the other side of said core-tube, opening when said plunger enters the core-tube and partially closing said core-tube on the reverse motion of the plunger to retard its return to the normal position, and means for controlling the energizing of said electro-magnet.

4. In a magnifying projecting apparatus, the combination of an endless chain of transparent display cards, two sprocket wheels adapted to operate said card chain, a screen and a lantern adapted to project said display cards magnified on said screen, an armature adapted to move said sprocket wheels step by step, an electro-magnet operating said armature, means for retarding the return motion of said armature to its normal position, and means for controlling the energizing of said electro-magnet.

5. In a magnifying projecting apparatus, the combination of an endless chain of transparent display cards, two sprocket wheels adapted to operate said card chain, a screen and a lantern adapted to project said display cards magnified on said screen, an armature adapted to move said sprocket wheels step by step and having a plunger suitably pivoted thereto, an electro-magnet operating said armature and having a core

tube adapted to receive said plunger, means for retarding the return of said plunger to its normal position and means controlling the energizing of said electro-magnet.

5 6. In a magnifying projecting apparatus, the combination of an endless chain of trans-
parent display cards, two sprocket wheels
adapted to operate said card chain, a screen
and a lantern adapted to project said dis-
10 play cards magnified on said screen, an
armature adapted to move said sprocket
wheels step by step and having a plunger
suitably pivoted thereto, an electro-magnet
operating said armature and having a core-
15 tube adapted to receive said plunger, a valve
suitably mounted on the other side of said
core-tube opening when said plunger enters
the core-tube and partially closing said core-
tube on reverse motion of the plunger to
20 retard its return to the normal position, and
means for controlling the energizing of said
electro-magnet.

7. In a magnifying projecting apparatus,
the combination with an endless chain of
25 transparent display cards, two sprocket
wheels adapted to operate said card chain,
a screen and a lantern adapted to project
said display cards magnified on said screen,
a lever fulcrumed on the axle of one of the
30 sprocket wheels having a pawl adapted to
engage in said sprocket wheel, a pull rope
for operating said lever of means for retard-
ing the return motion of said lever to its
normal position.

35 8. In a magnifying projecting apparatus
for indicating railroad stations in cars, the
combination with an endless chain of trans-
parent display cards, a lantern and a screen,
said lantern disposed to project said display
40 cards magnified on said screen, sprocket
wheels adapted to guide and operate said
chain, a lever pivoted on the axle of one of
the sprocket wheels having suitably pivoted
thereto a pawl for each direction of rota-
45 tion of said sprocket wheel and adapted to
engage said sprocket wheel, a shield secured
to the axle of said sprocket wheel dis-
posed to prevent the engagement of the pawl
for one direction of rotation when said le-
50 ver operates the pawl for the other direc-

tion; of means for operating said pawl bear-
ing lever in either direction.

9. In a magnifying projecting apparatus
for indicating railroad stations in cars, the
combination with an endless chain of trans- 55
parent display cards, a lantern and a screen,
said lantern disposed to project said display
cards magnified on said screen, sprocket
wheels adapted to guide and operate said
chain, a lever pivoted on the axle of one of 60
the sprocket wheels having suitably pivoted
thereto a pawl for each direction of rota-
tion of said sprocket wheel and adapted to
engage said sprocket wheel, a shield secured
to the axle of said sprocket wheel disposed 65
to prevent the engagement of the pawl for
one direction of rotation when said lever op-
erates the pawl for the other direction; of
electromagnetic means for operating said
pawl-bearing lever in either direction. 70

10. In a magnifying projecting apparatus
for indicating railroad stations in cars, the
combination with an endless chain of trans-
parent display cards, a lantern and a screen,
said lantern disposed to project said dis- 75
play cards magnified on said screen, sprocket
wheels adapted to guide and operate said
chain, a lever fulcrumed on the axle of one
of the sprocket wheels and having a pawl
for each direction of rotation of said 80
sprocket wheel suitably pivoted on one end
to engage said sprocket wheel, a shield se-
cured to the axle of said sprocket wheel
disposed to prevent the engagement of the
pawl for one direction of rotation when said 85
lever operates the pawl for the other direc-
tion; of an electromagnet disposed to at-
tract the other end of said lever in one di-
rection when energized, and an electromag-
net disposed to attract the said end of the 90
lever in the other direction when energized,
to operate said chain-operating sprocket
wheel and means for controlling the ener-
gizing of said electromagnets.

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