

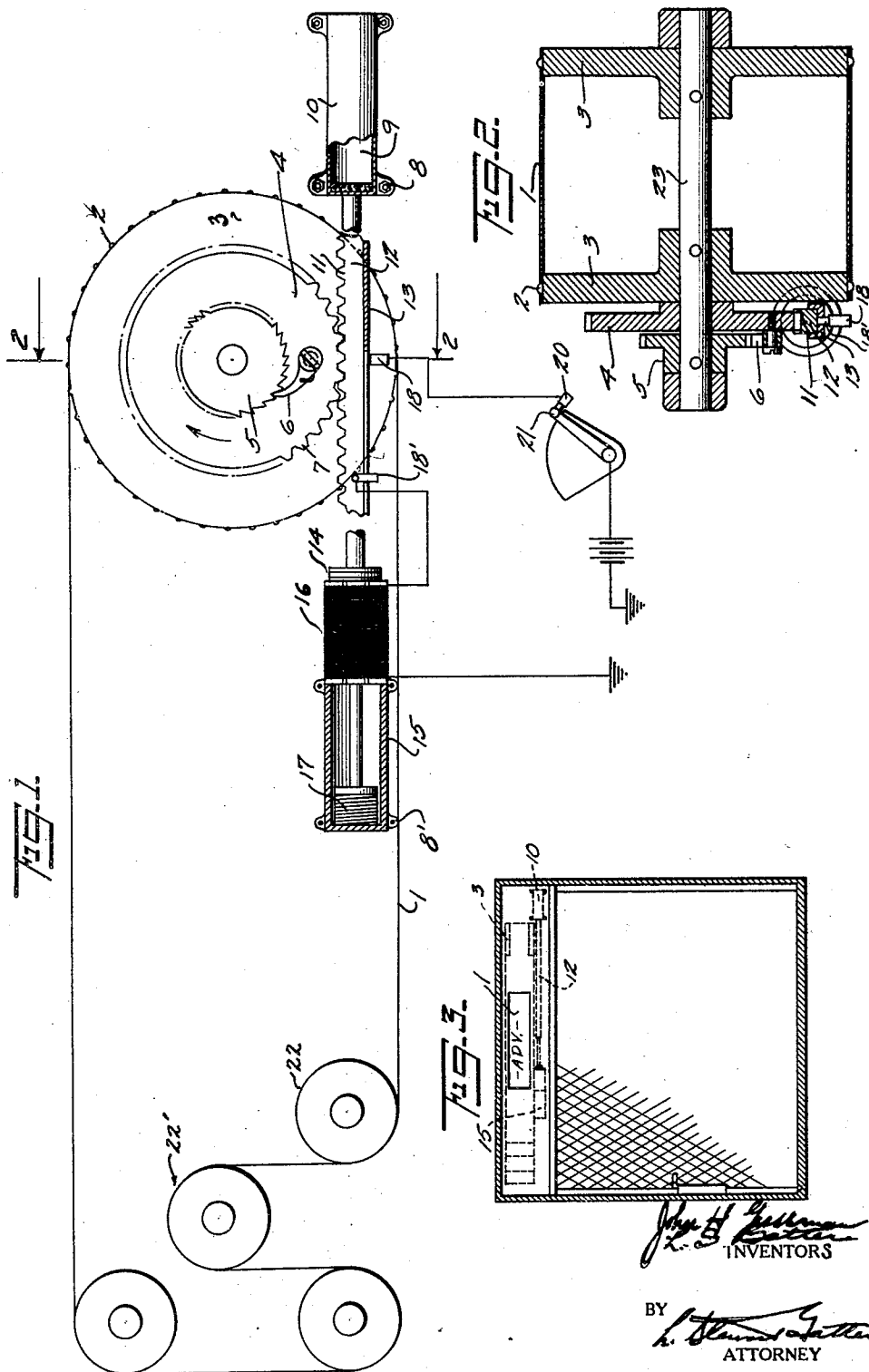
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ADVERTISING DISPLAY DEVICE FOR ELEVATORS

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ADVERTISING DISPLAY DEVICE FOR ELEVATORS

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It is an object of our invention to design an automatic advertising device suitable for use in passenger elevators which will be inexpensive to construct and operate. It is our further object to provide a device of this type which will cause an advertising display card or sign to appear in a visible position and remain in that position for a predetermined interval of time before the next sign appears. It is our further object to design the mechanism of our device so that any one display will remain fixed as long as the car is standing still or as long as the operating control mechanism is not functioning. We do this so that there will be no moving signs in the car while the elevator itself is at a floor landing and we thus avoid the possibility of delaying the exit from the car by reason of the passengers who might stop to look at a moving sign or object. It is our further object to design this device so that it will be compact, positive in operation and lend itself suitably for display in the interior of any passenger elevator. It is our further object to design a device which may be used in a department store elevator service which will, when the car is in motion only, function to disclose notices to the passengers of special sales and the like which may be in effect during any given day or period of time, also for hotels in theatre districts to display current theatre attractions.

Our invention will be more readily understood by reference to the accompanying drawings in which like numbers and like letters refer to like parts in the several views. Fig. 1 is a diagrammatic sketch of one type of mechanical construction of our device. Fig. 2 shows a section of the cylinder mechanism through the plane 2—2. Fig. 3 is a sketch showing possible mounting in the elevator car.

Referring now to Fig. 1, 1 is a sprocket chain or rotatory band carrying the advertising matter. It must also be understood that we may use suitable reels containing printed matter. We prefer a chain design in place of a belt or reel because we desire to prevent slipping and have a positive position of each respective advertisement as it appears in the

visible portion of the box container; 2 are the sprockets or teeth on the main sprocket wheel 3 which may be of such diameter so that a single complete revolution will have an effect on the sprocket chain of one complete depth or length of one advertisement. We may of course arrange this by gears or otherwise so that it will give a longer or deeper length to each space; 3 is the main wheel or cylinder solidly connected to the shaft 23; 4 is a driving gear loosely connected to the shaft 23 and free to turn thereon and which contains the teeth 7 which mesh with the rack teeth 11 on the rack 12; 5 is a ratchet wheel solidly connected to the shaft 23, which is engaged by a pawl 6 mounted on the driving gear 4. A further pawl (not shown) to be mounted on the side of the case so that it engages the teeth of the ratchet wheel 5, will prevent 5, and hence 3, from turning backward, in any event, when gear 4 is reversed by the reverse action of the rack 12. The rack 12 has, at one end, a dash-pot time element plunger means working into the cylinder 10 against an air chamber 9 held in position against the casing by the lugs 8. The rack 12 also works along the guide 13 and its other end works into the cylinder 15 of an electromagnet 16 against the compression spring 17, the magnet case 15 being secured by the lugs 8'. One side of the magnet coil may be connected to the ground and the other side runs to the contactors 18' and 18, the moving contactor 18' being mounted on the rack 12 and is in contact engagement with stationary contactor 18 in the starting position. The contactor 18 is connected at 20 with the car switch 21 or with the starting button in the elevator car, or with other suitable car controller circuits and thence to the source of energy used in the car control circuit. The sprocket chain may be run over staggered rollers 22 and 22' mounted in the box container so that additional advertising matter may be thus obtained.

The operation of our device, as disclosed by the mechanism described, would be as follows:

When the car switch or car starting button 21 is thrown to the up or down position the

coil 16 is energized, through the contactors 18 and 18' being closed, pulling the rack 12 against the compression spring 17 in a quick motion. This quick motion is accomplished with sufficient energy, by reason of the capacity of the electromagnet 16, so that the initial impulse is sufficient to compress the spring 17 and to accomplish a complete movement of the rack and gear of that particular advertisement. Although the contactors 18 and 18' are opened almost immediately when the electromagnet 16 is energized, nevertheless, the initial impulse provides sufficient momentum to accomplish the desired work. Of course, the contactors 18 and 18' may also be constructed as sliding contactors so that they will maintain contact during part of the travel if desired, but this should not be necessary if the coil 16 is of heavy enough design. The rubber bumpers 14 mounted on the ratchet 12, come together with bumpers positioned on the cylinder 15 to take up the impact; the contactors 18 and 18' are opened. The gear 4 is revolved and through the pawl 6 picks up the ratchet 5 and main drive wheel 3 and revolves the entire mechanism through one revolution so that the next successive advertising sign is brought into position in the visible space. As soon as the contactors 18 and 18' are open the magnet 16 is de-energized and the spring 17 forces the rack 12 back into the time element dash-pot cylinder 10 against air pressure 9 which can be regulated to take up any required amount of time that may be necessary for each individual sign to be displayed. It will also be observed that until this time has elapsed the contactors 18 and 18' are not closed and even though the car switch may be on, the mechanism will not function until such predetermined time interval has elapsed. If the car switch is still on, a successive repetition of the motion will ensue. If the car switch is not on, the sign that has been brought into position will stay there until the next motion of the car switch or starting button so that there can be no motion of the advertising sign except when the car is in operation, or, that is to say, when the car is standing at a landing each advertising sign displayed in the visible space does not move and the attention of the passenger is not attracted by a moving sign and consequently there is no tendency to delay exit from the car with consequent slowing of service.

It will be noted that we have eliminated the possibility of sliding by using a chain so that each particular advertisement will be synchronized with the visible portion of the case. It is to be understood that in our invention we may substitute in place of the magnet operation, an electric motor drive to operate the mechanism of the device although we do not here show specific mechanical arrangement for the use of such electric

motor but it is within the scope and purport of our claims.

Having thus described our invention, what we claim and desire to secure by United States Letters Patent is:

1. In an advertising display device for elevators, a car controlling switch, a plurality of advertisements, means to cause same to successively appear in a space visible in the elevator cab, and to remain in such visible space for a predetermined interval of time each and to so remain when the car control switch is off and the car at rest.

2. In an advertising display device for elevators, a car controlling switch, a plurality of advertisements, means to cause same to successively appear in a space visible in an elevator cab, means for disconnecting the operating mechanism of the device when the car control switch is off and holding said advertisements in position in said visible space when the elevator is at rest and for a predetermined interval of time when the elevator is in motion.

3. In an advertising display device for elevators, a plurality of advertisements automatically rotated from a cylinder, said cylinder actuated by rack and gear mechanically connected therewith said rack actuated by an electro-magnet and governed by a time element device, said magnet being energized only when the car control switch is in the on position.

4. In an advertising display device for elevators, the combination of a plurality of advertising signs rotated by a rotating cylinder, said cylinder actuated by an electromagnetically driven rack and gear, said electro-magnet being energized by the operation of the car control with means for timing the operation of said rack.

5. In an advertising display device for elevators, the combination of a plurality of advertising signs rotated by a rotating cylinder, said cylinder actuated by an electromagnetically driven rack and gear, said electro-magnet being energized by the operation of the car control with mechanical means for timing the operation of said rack.

6. In an advertising display device for elevators, a plurality of advertisements mounted upon a cylinder free to rotate, said cylinder rotated by a mechanical drive, said drive electrically operated through said elevator controller to function only when said controller is operated, said drive continuously governed by a time element device.

In witness whereof, we have hereunto set our hands to these specifications this 23rd day of March, 1928.

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