

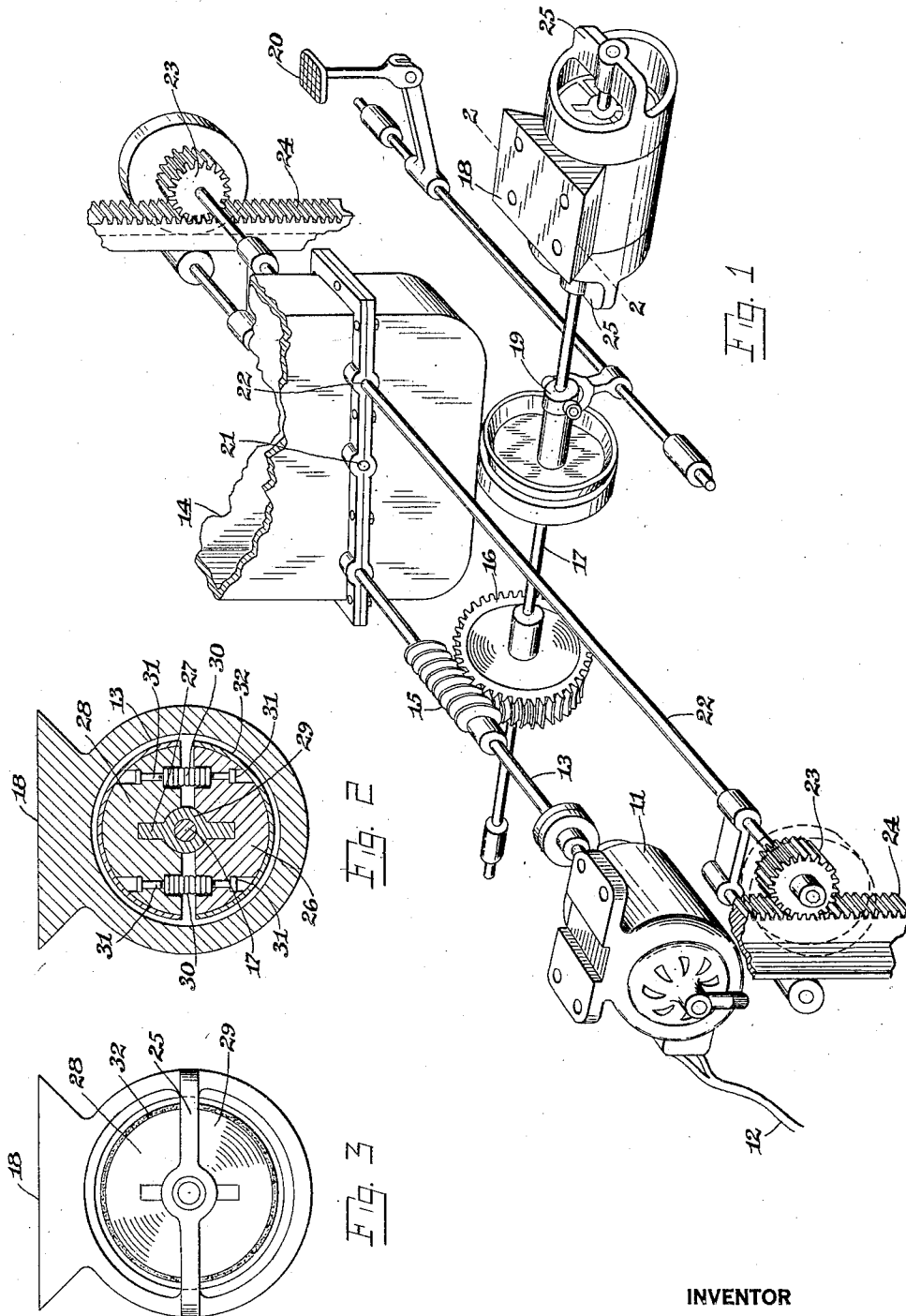
Nov. 1, 1932.

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1,885,458

SPEED CONTROL FOR ELEVATORS

Filed March 15, 1930



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SPEED CONTROL FOR ELEVATORS

Application filed March 15, 1930. Serial No. 436,095.

This invention relates to speed control for elevators, both passenger and freight, and especially a cableless elevator in which the motive power driving the elevator car within the elevator shaft is obtained from an electric motor and mechanism traveling with the car, and controlled by a human operator, the speed control having suitable connections with a source of power.

The primary object of my invention is the provision of a speed control for elevators of this character providing simple but efficient means for regulating the speed of the elevator, giving maximum simplicity of construction, maximum efficiency of operation, a mechanically balanced movement and added safety.

Another object of my invention is the provision of a speed control for an elevator of this character having the driving means mounted thereon and means in the elevator shaft interengaging with the driving means for propelling the elevator.

Another object of my invention is the provision of an elevator of this character comprehending an electrically driven car, the driving mechanism being of the gear train type, revolving cogged drive wheels engaging rack rails mounted in the shaft and of special design.

Another object of my invention is the provision of a speed control for an elevator having an electrical controlling apparatus of novel design, wherein means are provided for regulating the speed of the elevator in its upward and downward movements.

Another object of my invention is the provision of a speed control for an elevator of this character that is less expensive to manufacture, of compact formation, readily assembled, easily installed, and of efficient and durable construction and of minimum expense in maintenance.

Another object of my invention is the provision of a speed control for an elevator of this character having special forms and constructions having the various parts employed, the provision of novel arrangements for standard application, novel arrangements for regulating the speed of the elevator in its up-

ward and downward travel and means for automatically controlling the speed limits.

To these and other objects, therefore, the nature of which will be readily understood as the invention is hereinafter disclosed, my invention consists in the novel arrangement and construction of the various parts of my speed control whereby certain important advantages are attained and the apparatus rendered simpler, less expensive and more convenient and facile for installation, use and employment, hereinafter more fully described and illustrated in the accompanying drawing and more particularly pointed out in the accompanying claims.

In the accompanying drawing, in which similar reference characters or numerals indicate similar parts in each of the several views

Figure 1 is a perspective view of my improved speed control, secured to the operating parts of a cableless elevator, part of the vertical train rack and the housing box for some of the working parts being broken away;

Figure 2 is a cross vertical sectional view on the line 2—2 of Figure 1; and

Figure 3 is a front elevation detached of my improved speed control.

Referring specifically to the drawing, 11 indicates the electric motor of any form of construction, having the source of supply for electricity 12, and having its shaft 13 passing through the housing box 14.

Upon this shaft 13 is secured the worm 15 engaging with a worm gear wheel 16 which is secured to the axle 17 being connected by a journal bearing (not shown), and the end passing through the speed control box 18.

On this shaft 17 is secured the clutch mechanism 19 of the usual construction, which will enable the operator to make the necessary repairs, and in the event the elevator should stop between the floors on account of the current being cut out or other defects in the working part of the elevator the operator by manipulating the foot lever 20 controls the clutch mechanism 19, regulating the brake pressure on the shaft 17 and the car will travel downward at a regulated speed

until it reaches its downward destination when it will stop.

On the other end of the shaft 13 in the housing box 14 is a gear wheel meshing in another gear wheel on shaft 21 and this last mentioned gear wheel meshing with the gear wheel on the main shaft 22, all the gear wheels in the housing not being shown in the drawing.

To this main shaft 22 is secured at each end gear wheels 23 traveling in tooth racks 24.

The shaft 17 passing through the speed control box or housing 18 has its bearing in the sleeve portion 25. On the shaft 17 after it passes through the speed control box or housing 18 is provided with a collar 26 having projections 27 to which the sections 28 and 29 of the speed control clutch is secured, as shown in Figure 2.

On the inner side of the speed control box or housing 18 and secured to the shaft 17 is secured the sections 28 and 29 held in place by the coil springs 30. Said coil spring 30 having regulating screws 31 to regulate the speed of the car. Around the periphery of these sections 28 and 29 is secured the felt or any other frictional material 32 which will come in contact with the inner surface of the speed box or housing in the event the speed of the car should by some means exceed the regulation speed, thereby reducing the speed of the elevator.

Without further description it is thought that the features and advantages of my invention will be readily apparent to those skilled in the art, and it will, of course, be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention or its scope as claimed.

What I claim is:

1. In a speed control for elevator of the character described, comprising a main drive shaft, a worm secured thereto, an auxiliary shaft, a gear wheel secured to the auxiliary shaft and meshing in said worm and means for driving same, and a frictional brake mechanism secured to one end of said auxiliary shaft.

2. In a speed control for elevator of the character described, a main drive shaft, a worm secured thereto, an auxiliary shaft, a worm wheel secured to said auxiliary shaft and meshing with said worm, expansion section secured to said auxiliary shaft and having a means for regulating said expansion sections.

3. In a speed control for elevator of the character described, a main drive shaft, an auxiliary shaft, means for transmitting power from the main shaft to the auxiliary shaft, expansion sections secured to said auxiliary shaft, springs secured to said expansion sec-

tions, screws secured to said springs to regulate the tension of said springs for controlling the action of said expansion sections, and a housing in which the expansion sections frictionally contact.

4. In a speed control for elevators of the character described, comprising a motor operated main drive shaft, a worm mounted thereon, an auxiliary shaft, a worm gear on the auxiliary shaft and meshing with the worm, and means for regulating the speed of said auxiliary shaft.

5. In a speed control for elevators of the character described, comprising a main drive shaft, a worm secured thereto, an auxiliary shaft, a clutch secured to said auxiliary shaft, a housing, said auxiliary shaft passing through the housing and expansion shaft secured to said auxiliary shaft and located in the housing.

6. In a speed control for elevators of the character described, a main drive shaft, a worm secured thereto, an auxiliary shaft, a clutch secured to said auxiliary shaft, a foot lever attached to said clutch, a housing, said auxiliary shaft passing through said housing and having secured thereto expansion sections serving as a brake.

7. In a speed control for elevators of the character described, a main drive shaft, a worm secured thereto, an auxiliary shaft, a clutch secured to said auxiliary shaft, a foot lever manipulating said clutch, a housing, said auxiliary shaft passing through said housing, expansion sections secured on said auxiliary shaft and located on the inside of said housing, and means for operating the same.

8. In a speed control for elevators of the character described, a main drive shaft, an auxiliary shaft, means for transmitting power from the main drive shaft to said auxiliary shaft, a housing, expansion sections secured to said auxiliary shaft, and operating in said housing and springs secured to said expansion sections for regulating the speed of said auxiliary shaft.

9. In a speed control for elevators of the character described, a main drive shaft, an auxiliary shaft, means for transmitting power from the main drive shaft to the auxiliary shaft, a clutch secured to said auxiliary shaft, expansion sections secured to said auxiliary shaft, a housing for said expansion sections, a frictional material secured to the periphery of said expansion sections, spring secured to said expansion sections and means for regulating the speed of said auxiliary shaft.

10. A speed control for elevators comprising a gear supporting housing, a motor, a shaft operated by said motor and connected to gears in the housing, a worm mounted on said shaft, a driving shaft controlled by the gears in the housing and by which motion

is imparted to the elevator, an auxiliary shaft,
a worm gear carried by the auxiliary shaft
and being in mesh with the worm, a clutch
carried by the auxiliary shaft, a foot lever
for manipulating the clutch, a brake housing,
and a pair of expansion members mounted on
the auxiliary shaft and within said housing
by which braking action is imparted to the
driving mechanism.

In testimony whereof I affix my signature.

PIETRO MANISCALCO.