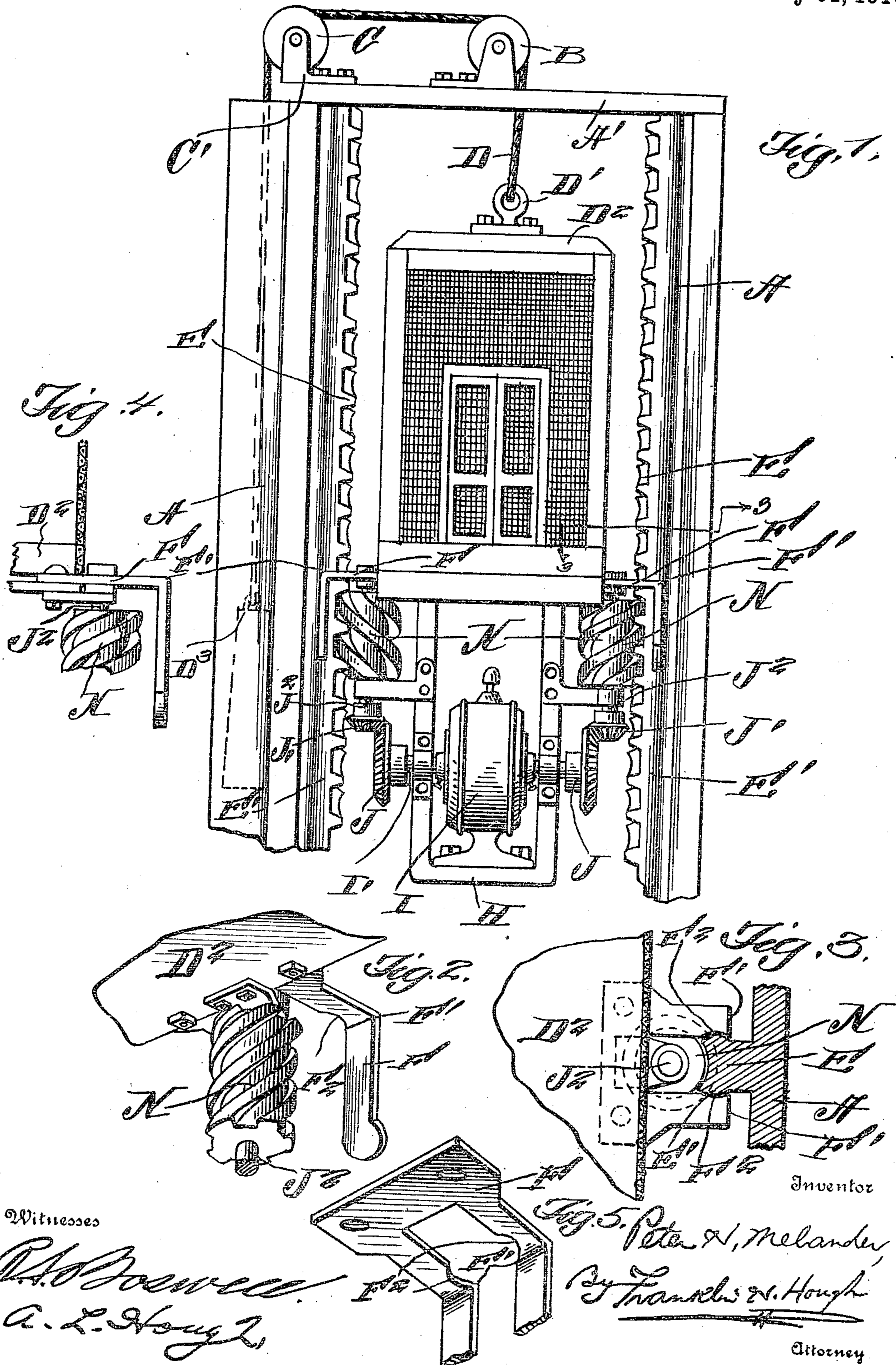


## ELEVATOR APPARATUS.

APPLICATION FILED JAN. 16, 1909. RENEWED OCT. 25, 1909.

959,778.

Patented May 31, 1910.





# UNITED STATES PATENT OFFICE.

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ELEVATOR APPARATUS.

959,778.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed January 16, 1909, Serial No. 472,719. Renewed October 25, 1909. Serial No. 524,534.

*To all whom it may concern:*

Be it known that I, PETER H. MELANDER, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Elevator Apparatus; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in safety elevator apparatus and comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claim.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of an elevator showing the features of my invention as applied thereto. Fig. 2 is an enlarged detail perspective view of a part of the invention. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is a detail view partially in section, and Fig. 5 is an enlarged detail view of a bracket guide member.

Reference now being had to the details of the drawings by letter, A—A designate standards of the elevator frame having a pulley B mounted in suitable bearings on a cross-piece A', and C designates a pulley journaled in a bracket member C' also mounted upon said cross-piece adjacent to one end, and a cable D is fastened to an eye D' upon the car D<sup>2</sup> and passes over said pulleys and has a counter-balance weight D<sup>3</sup> secured to its other end. Upon the inner face of each of said standards of the frame are the spiral tracks E, and F—F designate bracket guide members, each of which is forked as shown clearly in Figs. 3 and 5 of the drawings, and the arm of each of said bracket members is bent at an angle, as at F', and spaced apart. The inner edge of

each arm of said bracket members is recessed away as at F<sup>2</sup> in order that said arms may fit about the convexed portions E' of the spiral or worm tracks E, as shown clearly in Fig. 3 of the drawings. Each of said bracket guide members is fastened by any suitable means, one to either side of the car adjacent to its lower end and projecting laterally straddles the projecting portion of the spiral tracks E, as shown clearly in the drawings.

Depending from the lower portion of the car is a frame H having a motor I supported thereon, the shaft I' of said motor being journaled in bearings in said frame and upon each end of said shaft is a beveled gear wheel J, each of which is designed to mesh with a similar gear wheel J' fixed to the bottom of a shaft J<sup>2</sup> on which is a spiral worm N designed to engage the spiral grooves formed in the track E. It will be noted that there are two of these spiral worms N one upon each side of the elevator and mounted as shown and described. An electric current being conveyed to the motor in any suitable manner, the power for operating the motor is generated and transmitted through the worms which are vertically disposed and, as they rotate in the grooved tracks, will cause the car to raise and lower, the car being counter-balanced by the weight which is attached to the cable at the upper end of the car.

Any suitable form of brake mechanism, not shown, may be employed for holding the motor shaft or worms from rotation, whereby the car may be held at any desired location.

From the foregoing, it will be noted that, by the provision of an apparatus as shown and described, means is afforded whereby all accidents incident to the falling of elevators may be avoided and, by reason of the peculiar construction, a safe and powerful means is afforded for operating an elevator.

What I claim to be new is:—

In combination with an elevator car, a shaft having worm tracks thereon, vertically mounted worms carried by the car and engaging said tracks, a motor carried by the

car, gear connections between the same and  
said worms, bracket guide members fixed to  
the car and having arms, each of which is  
concaved upon its inner edge, the opposite  
5 sides of said tracks having convexed por-  
tions over which the concaved parts of said  
arms extend, each of said arms being bent  
at a right angle and extending longitudi-

nally with said tracks behind said convexed  
portions, as set forth. 10

In testimony whereof I hereunto affix my  
signature in the presence of two witnesses.

PETER H. MELANDER.

Witnesses:

J. A. Roos,

GEO. W. FRITZ.