July 14, 1931. N. STEVELMAN 1,814,610

COUNTERBALANCE WEIGHT

Filed May 8, 1929

Fig. 1,

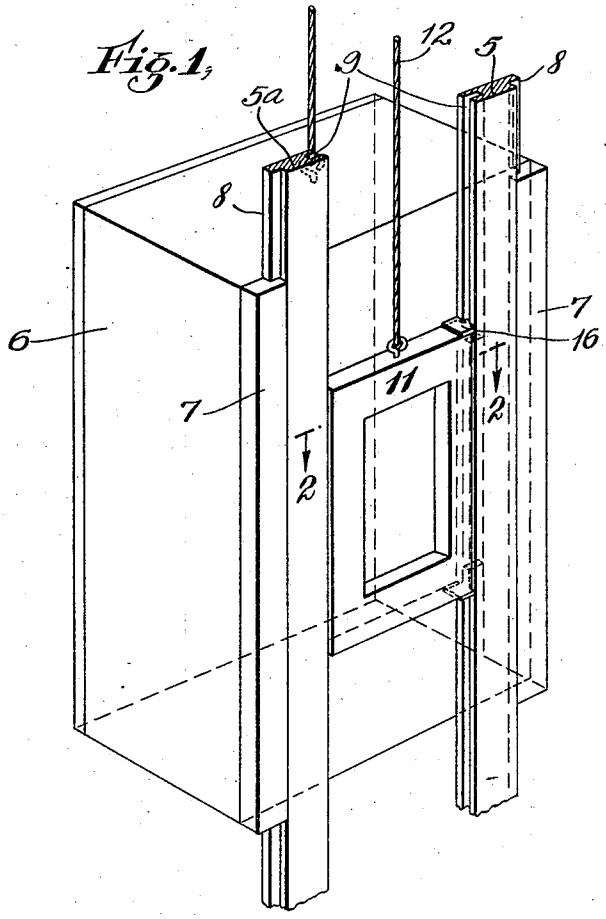


Fig. 3,

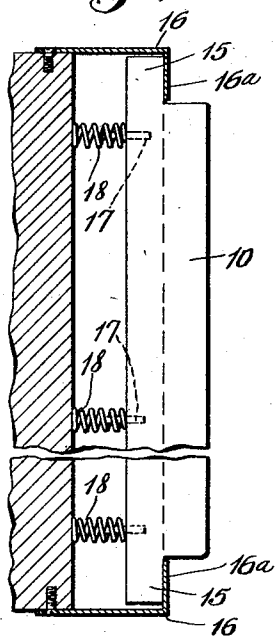


Fig. 4,

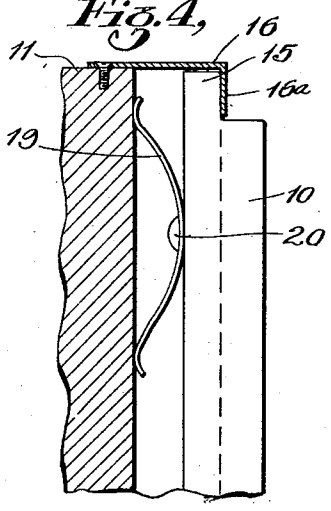
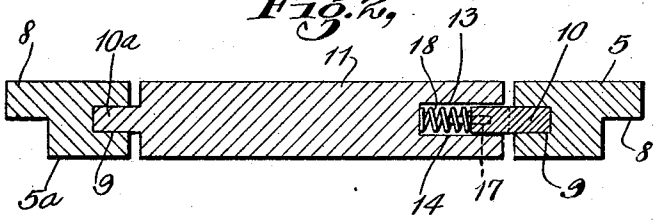


Fig. 2,



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Patented July 14, 1931 1,814,610

UNITED STATES PATENT OFFICE

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COUNTERBALANCE WEIGHT

Application filed May 8, 1929. Serial No. 361,365.

This invention relates to counterbalance weights and particularly to devices of this class of the type employed in conjunction with lifts of various kinds and classes such for example as elevators, dumbwaiters and the like; and the object of the invention is to provide a weight of the class specified with means for preventing the binding of the weight in the guide rails provided therefor so as to permit the free and easy movement of the weight longitudinally of said rails and to avoid interference with the smooth and easy operation of the lift, especially to the extent which it is traveled by said weight; and with these and other objects in view, the invention consists in a balance weight of the class and for the purpose specified which is simple in construction, efficient in use and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a perspective view showing part of the guide rails of a dumbwaiter or other lift and illustrating one of my improved balance weights mounted in connection therewith.

Fig. 2 is a partial section on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal, sectional view through one side of the weight with part of the construction broken away; and,

Fig. 4 is a view similar to Fig. 3 showing only a part of the construction and showing a modification.

As stated, my invention may be employed in connection with lifts of various kinds and classes and for the purposes of illustrating one use of my invention, I have shown the same applied to a dumbwaiter lift. In Fig. 1, 5 and 5*a* represent the guide rails which are secured to one wall of the shaft or passage in which the lift is movable. At 6, I have indicated a dumbwaiter having flanges or shoes 7 at opposite sides thereof engaging flanges 8 on the rails 5—5*a* to guide the lift in its movement longitudinally thereof. The inner adjacent faces of the rails 5—5*a* are provided with grooves 9 in which projecting tongues 10—10*a* on the opposite sides of a balance weight 11 are adapted to operate. The weight 11 is placed in operative engagement with the lift 6 through a rope or cable 12 in the usual manner, the weight 11 being sufficient to counterbalance the capacity weight of the lift so as to provide for the free movement of the lift upwardly and downwardly over the rails 5 and 5*a*.

The weight 11 may be of any desired form and construction and is usually made of cast metal. This weight, as usually constructed, has two integral guide tongues such as the tongue 10*a*, but in carrying my invention into effect the weight is modified by providing a recess 13 at one side of the weight and mounting the movable tongue 10 in said recess and providing a plurality of springs 14 in the recess to normally move the tongue outwardly with respect to said recess. The tongue 10 includes upwardly and downwardly directed lugs 15, and keepers 16 are secured to the top and bottom faces of the weight and include flange portions 16*a* which extend onto the side walls of the weight to engage the lugs 15 to limit the outward movement of the tongue 10. The inner face of the tongue 10 is provided with a plurality of pins 17 on which are mounted springs 18 which normally serve to support the tongue in extended position.

In Fig. 4 of the drawings, I have shown a slight modification wherein I have substituted for the pins 17 and springs 18, a plurality of arc-shaped flat springs 19 secured to the inner faces of the tongues 10 as seen at 20.

From the foregoing, it will be understood that in the use of the weight, sufficient clearance will be provided between the side walls of the weight 11 and the adjacent walls of the rails 5—10 as clearly seen in Fig. 2 of the drawings. The weight will be guided in the rails by the tongues 10—10*a*, the tongue 10 permitting the free and easy movement of the weight longitudinally of the guide rails and compensating for any unevenness in the rail spread or in the distance between the

grooves 9 on adjacent faces of said rails. In this way, a free and easy action of the lift especially with respect to the weight function is provided, eliminating a difficulty which has been experienced in various types of lifts and particularly in dumbwaiter construction where the jamming of the counterbalance weight in the rails has rendered the dumbwaiter inoperative.

It will be understood that while I have shown certain details of construction for carrying my invention into effect, that I am not necessarily limited to these details nor to the use of a single, movable tongue, and various changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A counterbalance weight for lifts of the class described, said weight having a guide flange arranged longitudinally of one side edge thereof, the other side edge of said weight having a longitudinal recess and an elongated flange strip mounted in said recess and of a length substantially equal to the longitudinal dimensions of the weight, a portion of said strip projecting beyond said side edge of the weight to form a guide flange, and resilient means within said recess and cooperating with said strip to normally support the same in extended and operative position.

2. A counterbalance weight for lifts of the class described, said weight having a guide flange arranged longitudinally of one side edge thereof, the other side edge of said weight having a longitudinal recess and an elongated flange strip mounted in said recess and of a length substantially equal to the longitudinal dimensions of the weight, a portion of said strip projecting beyond said side edge of the weight to form a guide flange, resilient means within said recess and cooperating with said strip to normally support the same in extended and operative position, and means for limiting the outward movement of said strip with respect to said side edge of the weight.

3. A counterbalance weight for lifts of the class described, said weight having a guide flange arranged longitudinally of one side edge thereof, the other side edge of said weight having a longitudinal recess and an elongated flange strip mounted in said recess and of a length substantially equal to the longitudinal dimensions of the weight a portion of said strip projecting beyond said side edge of the weight to form a guide flange, resilient means within said recess and cooperating with said strip to normally support the same in extended and operative position, and means for limiting the outward movement of said strip with respect to said side edge of the weight, said means comprising projecting members on the upper and lower ends of said strip and keepers on said weight cooperating with said projecting members.

In testimony that I claim the foregoing as my invention I have signed my name this 3rd day of May 1929.

NATHAN STEVELMAN.