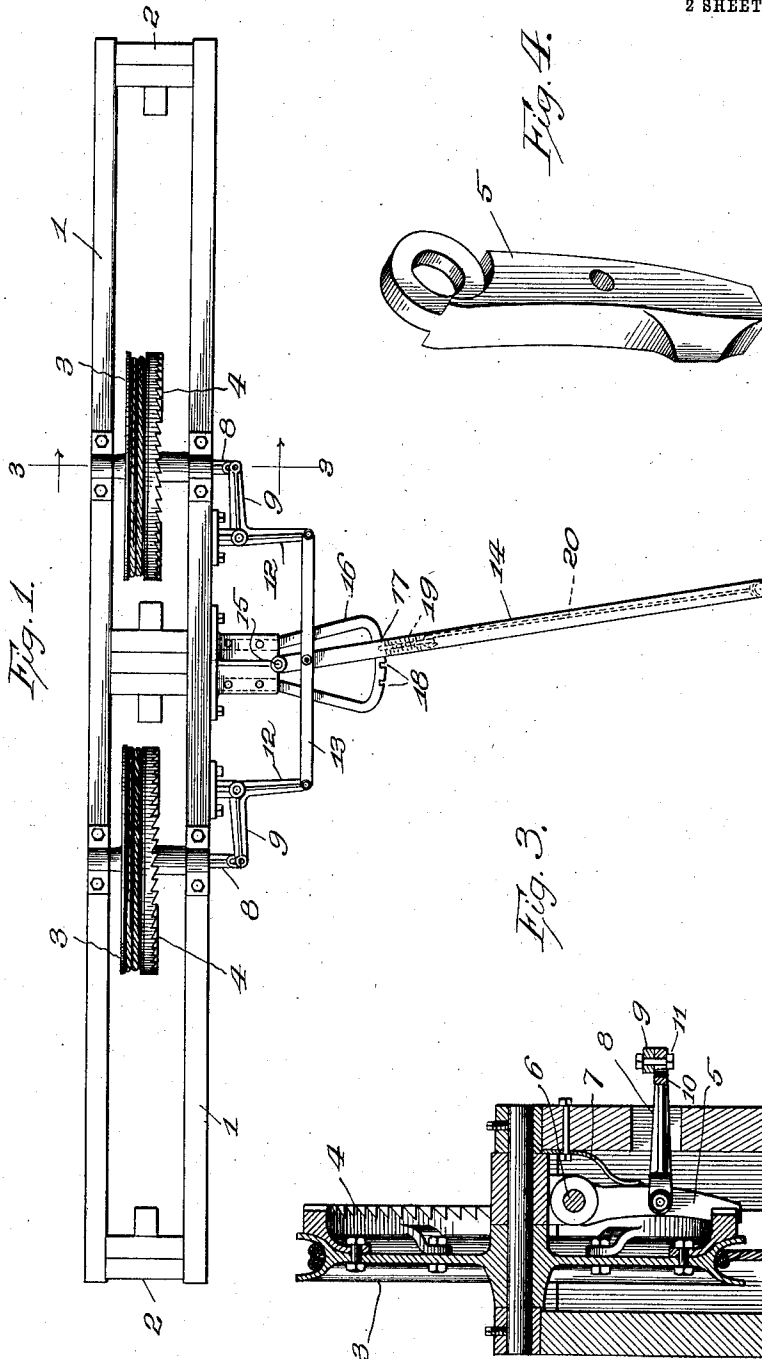


C. JOHNSON & A. SAHLEN.
ELEVATOR DEVICE.
APPLICATION FILED JULY 31, 1911.

1,025,873.

Patented May 7, 1912.

2 SHEETS-SHEET 1.



Witnesses:
Robert H. Weir
Charles J. Cobb

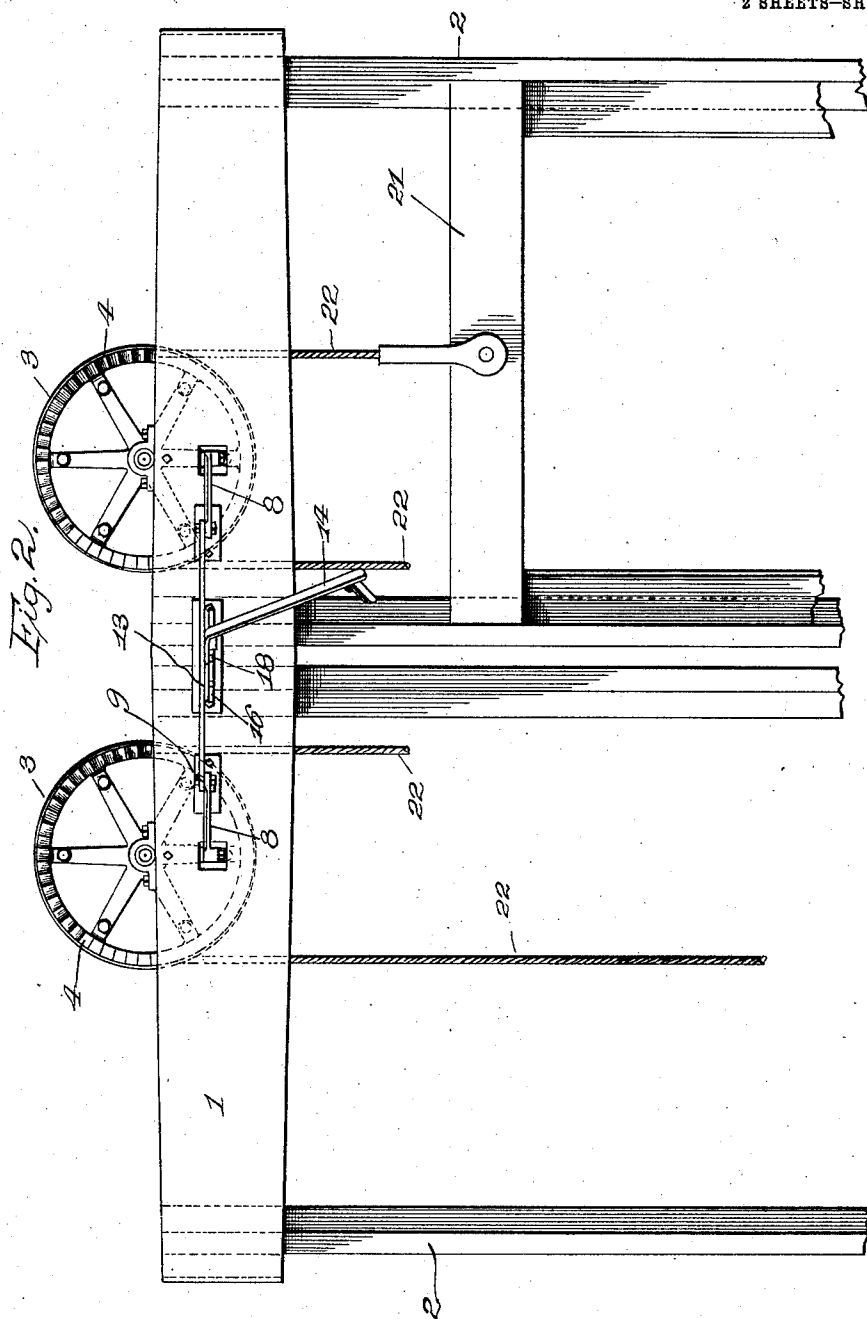
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Charles Johnson
Albert Sahlen
by: Hie & Hie Attys

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by: Nelson H. Hays

UNITED STATES PATENT OFFICE.

CHARLES JOHNSON AND ALBERT SAHLEN, OF CHICAGO, ILLINOIS.

ELEVATOR DEVICE.

1,025,873.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed July 31, 1911. Serial No. 641,542.

To all whom it may concern:

Be it known that we, CHARLES JOHNSON and ALBERT SAHLEN, both citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Elevator Devices, of which the following is a description.

Our invention is particularly adapted for use in connection with that class of elevators in which a pair of hoisting pulleys are arranged in proximity to one another, and over which a line common to the device extends to two alternately moving platforms. Devices of this kind are very common at present in connection with building operations, for the purpose of hoisting necessary materials.

Our invention consists in the novel construction, arrangement and combination of parts in a device of this kind, and more particularly shown in the drawings, and pointed out in the specification and claims hereto.

In the drawings, in which the same reference characters indicate like or corresponding parts: Figure 1 is a partial top plan of the hoisting pulleys and frame therefor, for a device embodying our invention. Fig. 2 is a partial side elevation of the hoisting wheels and connecting parts, Fig. 3 is a sectional view substantially on line 3, 3 of Fig. 1, and Fig. 4 is a perspective view of the preferred form of pawl employed with a device embodying our invention.

In the drawings, 1, 2 are suitable framework, the horizontal cross-pieces 1 having arranged between them suitable bearings for rotatable cable pulleys 3, 3, around the periphery of which the hoisting rope is preferably passed a plurality of times, as shown. On the marginal face of each of said pulleys is arranged a ratchet ring 4, the teeth of which preferably extend in opposite directions, as shown. In proximity to each of said wheels is arranged a pawl 5, as clearly shown in Figs. 3 and 4, adapted to engage with the ratchet rings 4, to permit the particular pulley wheel engaged to freely rotate in one direction only. As shown in Fig. 3, the pawl 5 is connected at its upper end to the support or pivot 6, a spring 7 tending to hold the free end of the pawl in engagement with the ratchet 4. Between the ends of the pawl is connected an arm 8, which is at its outer end connected to the bell-crank 9, 12. The engagement be-

tween the bell crank 9 and the arm 8 is by a slot and bolt connection, as shown at 10, 11, permitting the free end of the pawl to ride upon the ratchet teeth when the pulley is reversed, and to operatively engage with the ratchet teeth when it is attempted to rotate it in the opposite direction. The bell cranks 9, 12 for the two pulleys are suitably arranged so that their free ends 12 are connected by a link 13. A lever 14 pivotally supported on the structure, as at 15, and connected to the link 13, gives control of the pawls in their engagement with their co-operating ratchets. As the lever is moved in one direction or the other, it will cause one pawl to engage with its ratchet and simultaneously disengage the other, so that the pulleys may be rotated alternately, first in one direction and then the other, to alternately raise and lower the elevator platform supported thereby.

16 is a notched yoke for the lever 14, which is provided with a longitudinal movable dog 17, arranged to engage in one of the notches 18 in the yoke 16. A spring 19 serves to hold the dog in operative engagement with the notches in the yoke, and the rod 20 connected to said dog serves to retract the same in order to move the lever backward and forward, and to engage the dog with any desired notch. It may be arranged as preferred, that when the lever 14 is centrally positioned in the yoke 16 with the dog 17 engaging the central notch therefor, that both of the pawls may either be engaged with or disengaged from the ratchets. This, however, is a matter of construction, and may be arranged as preferred by the party erecting the device or manufacturing the various parts.

21, shown in Fig. 2, indicates the top portion of one of the elevator platforms, while 22 indicates the rope or line connecting the platforms and passing over the pulleys.

In operation, the parts being in the position shown in Figs. 1 and 2, the platform there shown is ready to descend, while the co-operating platform is below receiving its load. The pulleys are operated in a direction to lower the platform shown and raise the other, and at this moment the levers are preferably in the position shown in Fig. 1, which releases the pulley shown to the left from connection with its co-operating pawl 5, but places the pawl co-operating with the pulley to the right in opera-

tive connection with the ratchet thereof, so that in case of accident, the pawl would engage with the ratchet and prevent the loaded platform from falling.

5 Any preferred means may be employed to drive the device, either by animal or other power, our improvement being adapted to operate equally well with either.

10 Having thus described our invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of our invention, hence we do not wish to limit ourselves to the exact form, construction or combination
15 of parts herein shown and described, or uses mentioned.

What we claim as new and desire to secure by Letters Patent is:—

20 1. In a device of the kind described, a pair of hoisting pulleys, each provided on one of its side faces with a ratchet ring, the teeth of which project laterally from said face, a pair of elevator platforms, a line
25 common to both extending from the platforms and over said pulleys, the pulleys being adapted to rotate first in one direction and then the other, to alternately raise and lower the two platforms, in combination
30 with a pawl for each ratchet ring in proximity thereto and arranged to alternately engage with their cooperating ratchet rings, and an intermediate connection between the two arranged to the side of the pulleys substantially as shown whereby to operatively
35 engage one pawl as the other pawl is disengaged from its ratchet.

2. In a device of the kind described, a pair of cable pulleys arranged to rotate in either direction substantially in unison, and
40 each having upon its side a ratchet ring, the teeth of which extend laterally, in combination with a pawl for each pulley adapted to swing laterally arranged to cooperate with the ratchet ring thereof to limit the
45 movement of said pulley to one direction only, resilient means arranged to hold said pawls normally in engagement with their cooperating ratchet rings, and intermediate means common to both locking mechanisms,
50 whereby upon releasing one of the same from the ratchet ring, it will simultaneously engage the other pawl with its cooperating ratchet.

3. In a device of the kind described, a rotating pulley provided on its side with a
55 ratchet ring, in combination with a pawl arranged to normally engage said ring, an arm attached to said pawl, a controlling arm therefor connected to said arm with a slot and pin engagement, whereby said pawl
60 and arm are permitted a lateral movement, permitting the pawl to ride over the ratchets when the wheel is rotated in the reverse direction, but to engage with said pawl and
65 prevent the rotation of the wheel in the op-

posite direction, and the pawl being adapted to be wholly disengaged from said ratchet at will.

4. In a device of the kind described, a rotating pulley having a grooved periphery and a ring member secured to one side
70 thereof which latter is provided with laterally extending ratchet teeth, in combination with a pawl arranged to one side of the pulley and adapted to normally engage said
75 ring, an arm attached to said pawl, a controlling arm therefor connected to said arm with a slot and pin engagement, whereby said pawl and arm are permitted a lateral movement, permitting the pawl to ride over
80 the ratchets when the wheel is rotated in the reverse direction, but to engage with said pawl and prevent the rotation of the wheel in the opposite direction.

5. In a device of the kind described, the combination of horizontally extending frame
85 parts, rotatable pulleys arranged between the frame parts and having bearings adjacent the tops of said frame parts, said pulleys having on one face thereof annu-
90 larly disposed laterally extending ratchet teeth, a pawl for each pulley arranged between one of said frame parts and the ratchet face of the pulley, the pawls being
95 pivotally supported at their upper ends and arranged to engage at their lower ends the said ratchets, an arm projecting laterally from each pawl intermediate its ends, pivotally supported bell crank levers one for
100 each arm, and a connecting arm extending longitudinally of the frame parts and connected at opposite ends to said bell crank levers.

6. In a device of the kind described, the combination of horizontally extending
105 frame parts, rotatable pulleys arranged between the frame parts and having bearings adjacent the tops of said frame parts, said pulleys having on one face thereof annu-
110 larly disposed laterally extending ratchet teeth, a pawl for each pulley arranged between one of said frame parts and the ratchet face of the pulley, the pawls being
115 pivotally supported at their upper ends and arranged to engage at their ends the said ratchets, an arm projecting laterally from each pawl intermediate its ends, pivotally supported bell crank levers one for each
120 arm and having a pin and slot connection therewith, and a connecting arm extending longitudinally of the frame parts and connected at opposite ends to said bell crank levers.

7. In a device of the kind described, the combination of horizontally extending
125 frame parts, rotatable pulleys arranged between the frame parts and having bearings adjacent the tops of said frame parts, said pulleys having on one face thereof annu-
130 larly disposed laterally extending ratchet

teeth, a pawl for each pulley arranged between one of said frame parts and the ratchet face of the pulley, the pawls being pivotally supported at their upper ends and
5 arranged to engage at their lower ends the said ratchets, an arm projecting laterally from each pawl intermediate its ends, pivotally supported bell crank levers one for each arm, and a connecting arm extending
10 longitudinally of the frame parts and connected at opposite ends to said bell crank levers, a loop projecting outwardly from the frame to a point beyond said connecting frame and an operating arm pivoted at one
15 end to a suitable support and intermediate its ends to said connecting arm and having a holding engagement with said loop.

8. In a device of the kind described, the combination of spaced pulleys each having
20 on one face thereof an annular ratchet ring with the teeth projecting laterally from said face, an elongated arm projecting between the pulleys, a bell crank lever one at each end of said arm and pivotally connected

thereto, pivoted dogs one for each ratchet 25 pivotally supported, and an outwardly projecting arm for each dog connected to the adjacent bell crank lever.

9. In a device of the kind described, the combination of spaced pulleys each having 30 on one face thereof an annular ratchet ring with the teeth projecting laterally from said face, an elongated arm projecting between the pulleys, a bell crank lever one at each end of said arm and pivotally con- 35 nected thereto, spring pressed pivoted dogs one for each ratchet pivotally supported, and an outwardly projecting arm for each dog having a movable connection therewith.

In testimony whereof, we have hereunto 40 signed our names in the presence of subscribing witnesses.

CHARLES JOHNSON.
ALBERT SAHLEN.

Witnesses:

ROY W. HILL,
CHARLES I. COBB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."