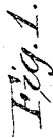


APPLICATION FILED MAY 16, 1908.

Patented May 10, 1910.

2 SHEETS—SHEET 1.



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ELEVATOR.

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957,379.

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2 SHEETS—SHEET 2.

Fig. 2

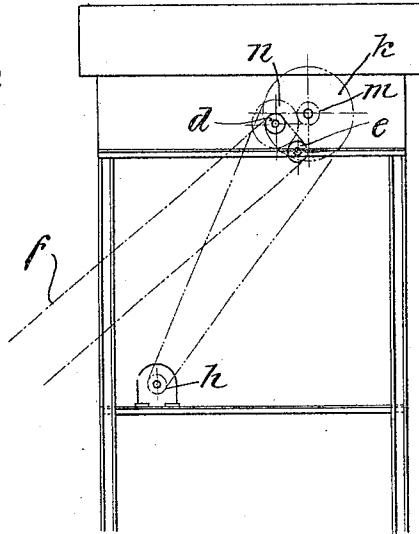


Fig. 4

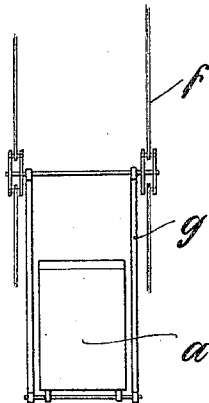
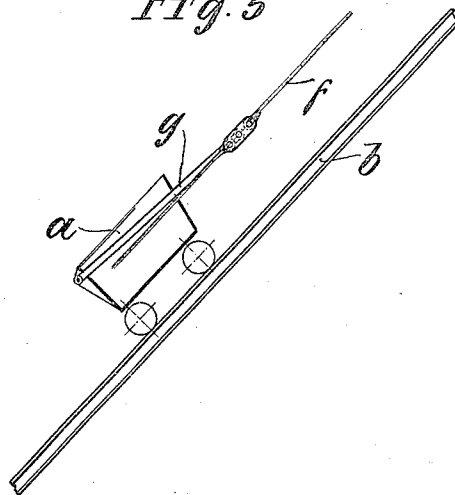


Fig. 3



Witnesses:

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ELEVATOR.

957,379.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed May 15, 1908. Serial No. 433,087.

To all whom it may concern:

Be it known that I, WILHELM REUBOLD, a subject of the German Emperor, residing at 7, Rodelstrasse, Karlsruhst, near Berlin, Germany, whose post-office address is the same, engineer, have invented certain new and useful Improvements Relating to Elevators, of which the following is a specification.

In the hitherto known elevators for example inclined elevators for clearing the mouths of shaft furnaces, it is necessary to reverse the elevator after the termination of each lift, for which purpose a mechanic is required, or for elevators of a high mechanical power complicated and expensive shunting apparatus is necessary. These disadvantages are obviated by the present invention in which the delivery buckets are attached to an endless rope, chain or the like, provided at the side of the elevator, by means of a link in such a manner that although the elevating means is continually moving in the same direction, the delivery bucket is caused to move upward and downward on the same elevator track.

In the accompanying drawing is diagrammatically shown a constructional form of the invention applied to an inclined elevator for a blast furnace.

Figure 1 is a diagrammatic side elevation of the apparatus. Fig. 2 shows diagrammatically the driving mechanism for the elevating means and Figs. 3 and 4 show the method of connecting the truck to the elevating means.

As may be seen in the drawing two endless cables *f*, provided one on each side of the inclined track *b* are guided over rollers *c*, *d* *e* mounted in bearings at the ends of the inclined track *b*. The cables *f* are continually driven in the same direction by any suitable means such for example as shown in Fig. 2, in which *h* is the motor fly-wheel which is connected to the driving wheel *d* for the endless cables *f* through suitable speed-reducing gear *k*, *m*, *n*.

The delivery bucket *a* is connected to the cables *f* by links *g* hinged to the rear end with respect to the upward movement of the truck.

The retardation of the movement of the delivery bucket *a* at the ends of the inclined track can be regulated by providing the guiding rollers of a suitable diameter. When, as shown in the constructional ex-

ample, two guiding rollers *d*, *e* are provided at the upper end of the inclined track for the cables *f* respectively the delivery bucket remains at rest until those parts of the cables *f* to which the links *g* are attached have passed over the rollers *d* and *e*. A similar arrangement can of course be also provided at the lower end of the inclined track. The elevator can be either single or double in which latter case the delivery buckets are guided either side by side or one above the other.

It is not necessary for the delivery buckets to be rigidly *i. e.*, undetachably connected to the endless cables *f*, but for example in elevators for clearing the mouths of shaft furnaces, the buckets, in which the ore and flux are taken up, could be so connected by suitable means to the links attached to the endless cable that the discharging of the furnace material from the ore trucks into hoppers and from these into the delivery buckets is obviated.

The invention of course can also be applied to vertical elevators.

What I claim as my invention and desire to secure by Letters Patent is:—

1. An elevator comprising a track, a delivery bucket adapted to move backward and forward successively upon the track, an endless moving member provided at the side of the track, and in connection with the bucket, one part of said member moving constantly in one direction and the other part constantly in the opposite direction substantially as described.

2. An elevator comprising a track, a delivery bucket adapted to move backward and forward successively upon the track, an endless moving member provided at the side of the track, and in connection with the bucket, one part of said member moving constantly in one direction and the other part constantly in the opposite direction, and means for connecting the bucket to the endless moving member in such a manner that when the bucket reaches the end of the track its direction of motion is reversed substantially as described.

3. An elevator comprising a track, a delivery bucket adapted to move backward and forward successively upon the track, an endless moving member provided at the side of the track, and in connection with the bucket, one part of said member moving constantly in one direction and the other

- part constantly in the opposite direction, and means for connecting the bucket to the endless moving member in such a manner that when the bucket reaches the end of the track its direction of motion is reversed, and means for giving the endless moving member a movement in a direction normal to the direction of movement of the bucket substantially as described.
- 10 4. An elevator comprising a track, a delivery bucket adapted to move backward and forward successively upon the track, an endless moving member provided at the side of the track, and in connection with the bucket, one part of said member moving constantly in one direction and the other part of said member moving constantly in the opposite direction, and means for connecting the bucket to the endless moving member in such a manner that when the bucket reaches the end of the track its direction of motion is reversed, and means for giving the endless moving member a movement in a direction normal to the direction of movement of the bucket and means for retarding the bucket when it has reached the end of the track substantially as described.
- In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.
- WILHELM REUBOLD
- Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.