

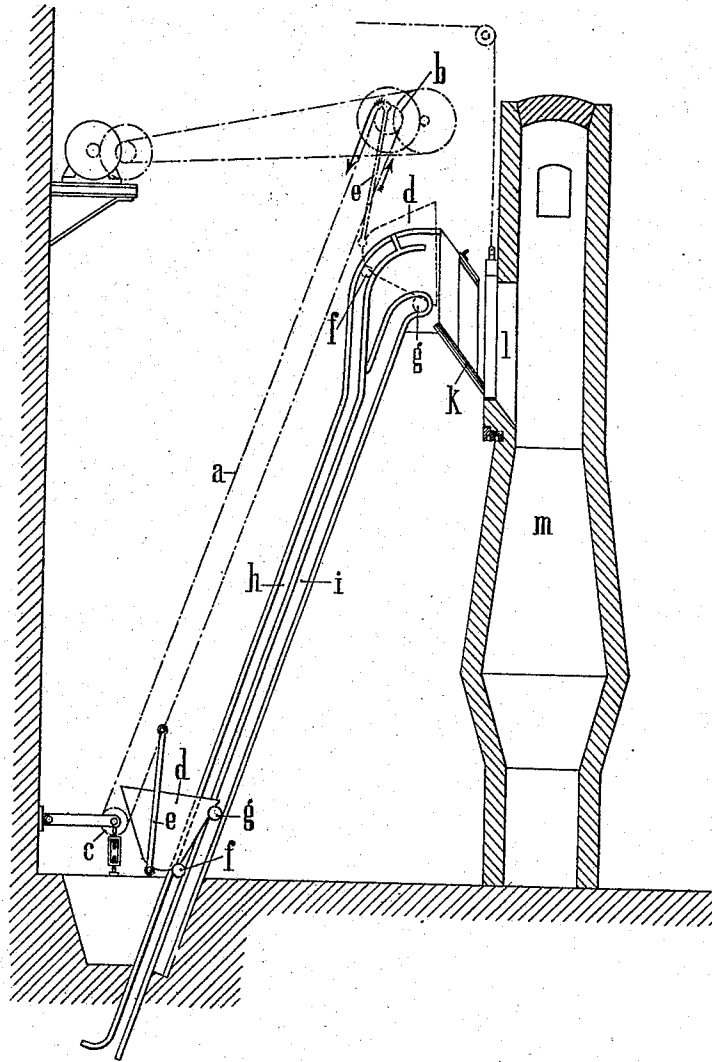
907,855.

R. DE MUYSER.
ELEVATOR.
APPLICATION FILED SEPT. 19, 1908.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.



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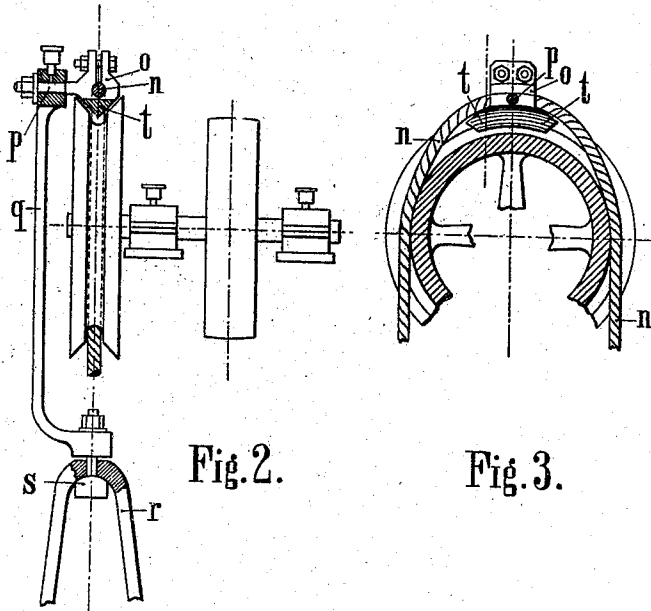
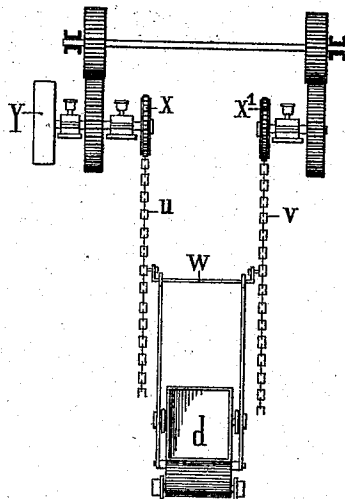


Fig. 2.

Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

RAYMOND DE MUYSER, OF ST. PETERSBURG, RUSSIA.

ELEVATOR.

No. 907,855.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed September 19, 1908. Serial No. 453,844.

To all whom it may concern:

Be it known that I, RAYMOND DE MUYSER, engineer, a citizen of Luxemburg, and resident of St. Petersburg, Russia, have invented certain new and useful improvements in elevators, which are principally intended for conveying material to gas-generators, cupola-furnaces, shaft-furnaces, high furnaces, and the like, of which the following is a specification.

This invention relates to a lift or elevator which is principally intended for conveying material to gas-generators, cupola-furnaces, shaft-furnaces, high furnaces and the like; and the object of this new construction of this kind of elevators is to prevent the hoisting-vessel from going up too high, either in consequence of the inattention of the attendants or other reasons, which not rarely leads, with the elevators now in use, to troublesome disorders and accidents; a further object of it is to empty the hoisting-vessel automatically, as soon as it has arrived at the place where it is to be emptied, without having to stop the driving-device.

In order to accomplish this, there has been provided a double guide for the hoisting-vessel running along the side of the driving-device, the single ropes of which run for the greater part parallel, and they only diverge at the place or places where the material is discharged. The driving-device for the hoisting-vessel is moreover guided over guide-wheels and connected with the hoisting-vessel in a manner that the coupling-part can pass over the guide-wheels, and that it does so after each emptying of the hoisting-vessel.

The invention is illustrated on the accompanying drawing, where similar letters refer to similar parts throughout the several views.

Figure 1 shows a form of construction of the new elevator, arranged by the side of a shaft-furnace, in a side-view. Figs. 2 and 3 show a special mode of coupling the driving-rope with a hoisting-vessel. Fig. 4 is a front-view of a modified form of construction, in which the hoisting-vessel hangs on two chains running side by side.

In the form of construction shown in Fig. 1 the driving-device for the hoisting-vessel is marked with *a*. The same is in this case indicated only diagrammatically, and in the form of an endless band. The driving-band runs over an upper guide-roller *b* and a lower

guide-roller *c*. The hoisting-vessel is marked with *d*. The connection between the driving-device *a* and the hoisting-vessel *d* is effected by a connecting-rod *e*. The hoisting-vessel *d* is provided with two pins *f*, *g*, running in guiding-grooves *h* and *i*. The guiding-grooves *h*, *i* run for the greater part of their length parallel to each other and only meet at the upper end under an angle, as will be seen from the drawing. A shaking-channel *k* is provided in front of the feed-opening *l* of the shaft furnace *m*.

The mode of working of the device is as follows:—Supposed the hoisting-vessel *d* is in a filled state at the lower end of the elevator and it is intended to convey the contents into the furnace *m* through the feed-opening *l*. If now the driving-device *a* is moved in the direction indicated by arrows, the hoisting-vessel is moved along by the connecting-rod *e*, the pins *f*, *g* running in the guides *h*, *i*. As soon as the place is reached where the tracks *h*, *i* diverge, the hoisting-vessel, which on reaching its highest point is in the position shown in Fig. 1 by dotted lines, is turned over and the contents thrown out, in order to run through the channel *k* into the furnace *m*. In the position indicated by dotted lines the coupling part is between the driving-device *a* and the connecting-rod *e* in its highest position above the guide-roller *b*. Higher than the position indicated by dotted lines the hoisting-vessel *d* can therefore not be lifted. As soon as this position is reached, the downward movement commences and the same continues until the coupling part between *a* and *e* has passed at the bottom around the guide-roller *c*.

While in Fig. 1 the connection between the hoisting-vessel *d* and the driving-device *a* is only represented diagrammatically, Figs. 2 and 3 and the Fig. 4 show two special kinds of connections between the hoisting-vessel and driving-device.

In the arrangement shown in Figs. 2 and 3 it has been supposed that the elevator is driven by a single rope *n*. This rope *n* carries a clamping-socket *o* with a lateral pin *p*, on which is fixed a hanger *q* from which hangs down a bow *r*, which in its turn carries the hoisting-vessel in a suitable manner. The connection of the bows *r* is only partially shown in the drawing, as the connection between them and the hoisting-vessel may be of any kind. In order to give to the hoisting-vessel a great freedom of motion, the

connecting-pivot *s* between both parts forms a ball-joint. The rope-clamp *o* is provided with lateral bearing-cams *t*, which slightly taper towards the ends, in order to prevent the rope from bending too much on its passing over the rope-pulley.

In the form of construction shown in Fig. 4, with 2 chains, the hoisting-vessel, which is again marked with *a*, hangs between the chains *u*, *v* on a bar *w* suspended from the chains. The chains *u*, *v* run over chain-wheels *x*, *x'* of which, in the case of this construction, the first is directly driven by a belt-pulley *y*, while the second is driven by a suitable transmission.

The arrangement of the guides for the hoisting-vessel and the chains *u*, *v* may also in the construction of the driving-device for the hoisting-vessel shown in Fig. 4 be the same as shown in Fig. 1. The mode of working of the device is therefore also with the construction according to Fig. 4 exactly the same as with the construction according to Fig. 1.

Instead of endless driving-organs for the hoisting-vessel may also be used chains, bands or the like with ends, which, of course, would require to be driven alternately in the one direction and the other.

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

1. A lift comprising a hoisting vessel, a

double guide for guiding said hoisting vessel, the upper end of said double guide being arranged to tilt the hoisting vessel, an endless driving mechanism comprising at least two rollers, one near each end of said guide, and an endless flexible member movable in one direction only over said rollers and means for connecting said hoisting vessel to said endless flexible member, said connecting means being arranged to pass over said rollers to reverse the direction of the hoisting vessel.

2. A lift comprising a hoisting vessel, a double guide for guiding said hoisting vessel, an endless driving mechanism comprising at least two rollers, one near each end of said guide, means for connecting said hoisting vessel to said endless driving mechanism, said connecting means being arranged to pass over said rollers to reverse the direction of the hoisting vessel, said guide being arranged to tilt said hoisting vessel at the upper end of said guide, and said connecting means being arranged to pass over the upper roller to reverse the direction of the hoisting vessel after the same is empty.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

R. DE MUYSER.

Witnesses:

H. A. LOVIAGHIVE,
AUG. MIGHIS.