

(No Model.)

E. SCHILLO.
MINING CAGE OR CAR.

No. 481,592.

Patented Aug. 30, 1892.

Fig. 1.

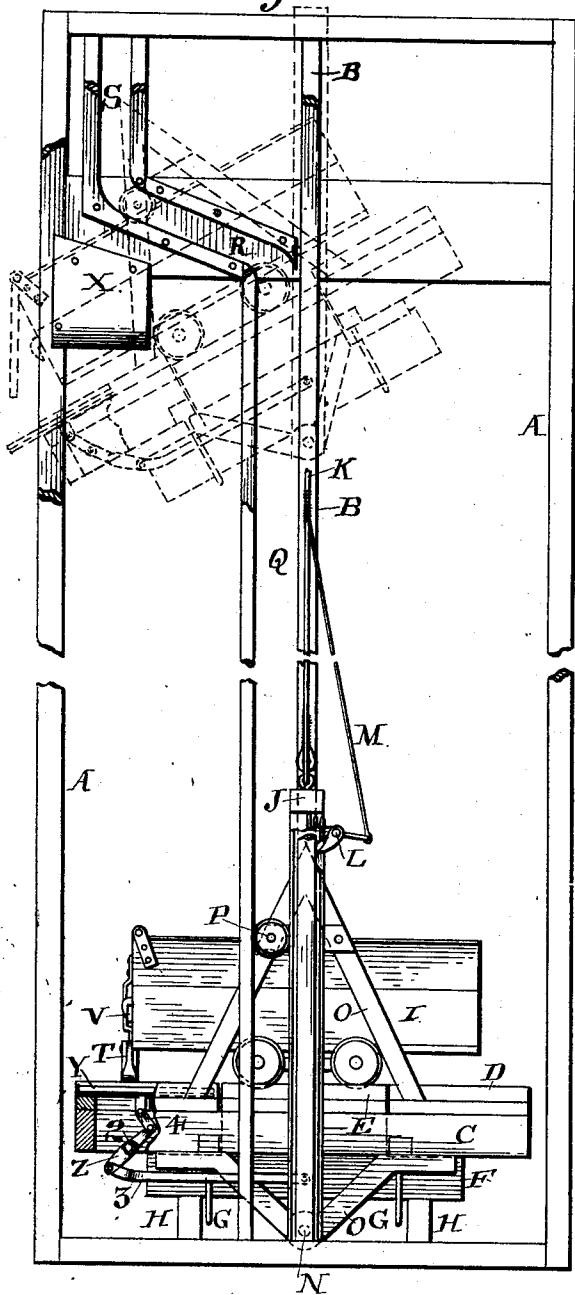
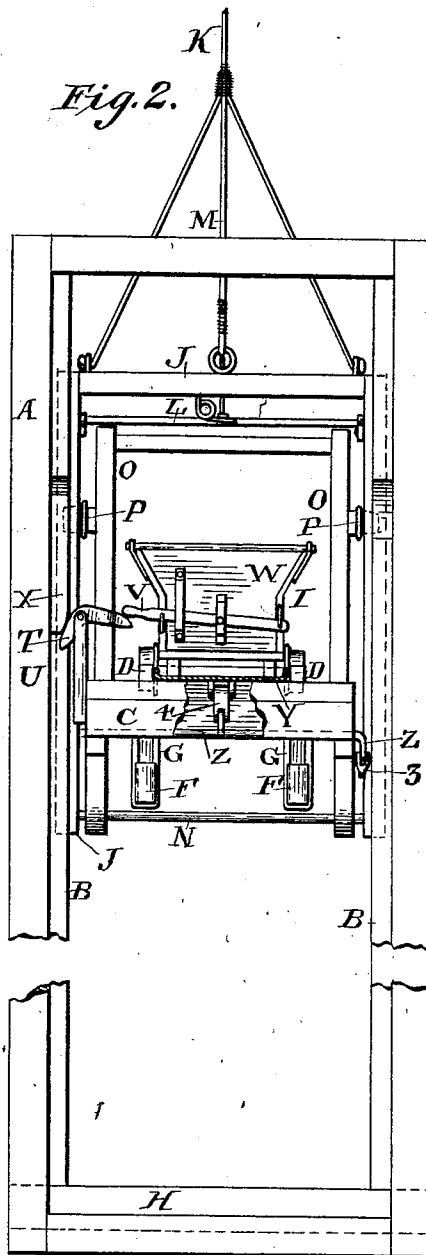


Fig. 2.



Witnesses

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MINING CAGE OR CAR.

SPECIFICATION forming part of Letters Patent No. 481,592, dated August 30, 1892.

Application filed May 17, 1892. Serial No. 433,301. (No model.)

To all whom it may concern:

Be it known that I, ERNEST SCHILLO, a citizen of the United States, residing at McDonald, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Mining Cages and Cars; and I do 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.

My invention relates to elevators and cars. The objects of my improvements are, first, to provide an elevator-cage adapted to receive a car so that it will automatically lock the car thereon when the cage is elevated; second, to provide an automatically-acting coal-chute which will be thrown forward when the car is dumped and withdrawn when the cage descends; third, to provide an automatically-acting lever which will unlock the swinging end-gate of the car at a predetermined point in the movement of the cage; fourth, to provide a swinging frame within the elevator-frame proper, which is adapted to swing and dump the car by means of certain connections with the side of the shaft or framework when the car arrives at the mouth of the mine or shaft, and, fifth, certain hereinafter-described details of construction.

To attain these objects my invention consists in the following construction and combination of parts, which will first be fully set forth and described in detail and the features of novelty then set forth in the claims.

Figure 1 represents a side elevation, partly broken away in section, of a device to which I have applied my improvements. Fig. 2 is a similar end elevation of the same.

In the drawings, A represents the framework of a mining-shaft or elevator-well.

B represents the opposite side guide-standards for the cage.

C represents the cage, which moves up and down within the shaft. The platform of the cage is provided with the usual rails D, which are in line with the rails in the bottom of the mine or gallery thereof when the cage is down. The central portion of the platform and the

short rails E thereon are fastened to the longitudinal girders F, the whole being supported when the car is in motion by a series of metal straps G. The construction is such that when the cage is at the bottom of the shaft the central portion of the platform rests upon the bars H, which forces up the central rails E, attached thereto, so that they are in line with the rails D, when the car I can be rolled on and off, as shown in Fig. 1. When, however, the cage moves upward, the rails E and the bars F attached thereto drop downwardly onto the bottom of the straps G, thereby depressing the rails E and forming an effective forward and back stop to lock the car against displacement.

J is the frame of the elevator, provided with the usual hoisting rope or ropes K and safety-catch mechanism L under control of the rope or cord M, attached to the main rope K.

N is a shaft at the bottom of the frame J, extending across the frame and journaled therein.

O is a supplementary framework, which, is pivotally supported upon the shaft N, the upper end of which is supported and guided by oppositely-journaled sheaves or pulleys P, which traverse guideways Q upon opposite sides of the shaft throughout its length.

The platform C and the car thereon are rigidly secured thereto and are carried by this supplementary frame O. As the cage ascends the shaft or well the platform preserves a horizontal position, owing to the sheaves P traversing the vertical guideways Q until said sheaves reach the inclined or oblique portion R of the guideways, when the sheaves P are deflected obliquely to one side, causing an oscillation of the supplementary frame O upon the shaft N, and the consequent tilting of the platform C with the car thereon, as shown in dotted lines, Fig. 1, for the purpose of dumping the car. At the opposite end of the inclined guideway R is a further vertical extension S thereof, so that any undue upward movement of the car will not cause the platform to be tilted over any farther, but will cause the car to assume the same angle until it again descends.

T is a pivoted latch-operating lever, which is carried upon a standard U, rigidly attached to the platform of the car.

V is the pivoted latch, which secures the end-gate W of the car I in place.

When the car arrives at the mouth of the mine and is ready to be dumped, the outer end of the lever T comes in contact with the board or plate X on the side of the shaft, which depresses the lever and causes its inner end to be thrown upward into contact with the latch D, as shown in Fig. 2, thereby unlocking the latch. The plate X is of the shape shown, having a considerable contact-surface, which enables the latch-operating lever T to slide along it in continuous contact therewith during the oscillatory movement of the supplementary frame O.

Y represents the coal-chute. This chute is normally withdrawn within the limits of the platform C, except when the car is ready to be dumped, when it is projected forwardly, as shown in dotted lines, Fig. 1, which prevents the coal from falling back into the mine-shaft and the consequent injury or death of the operatives below.

Z is a crank-shaft journaled in a platform at the point 2.

3 is a link-rod pivotally connected to the lower end of the plank Z at one end and to the framework J of the elevator at the other.

4 is a short link pivotally connected to the coal-chute I at one end and to the crank-lever Z at the other.

The operation is such that when the supplementary frame O is vertical the coal-chute Y is withdrawn within the platform C, as shown in full lines, Fig. 1; but when the frame O is tilted the platform to which the crank-lever Z is journaled is carried away or to one side of the main frame J, which causes the link-rod 3 to pull upon lever Z, and thereby throw the coal-chute outwardly and forwardly, as shown in dotted lines in the same figure.

I claim—

1. A mining-cage provided with a platform having an intermediate sectional track, tracks upon both sides of said sectional track in line therewith, the inner ends of which form abut-

ment-stops for the car-wheels when the cage is elevated, a frame carrying the sectional track, having a limited movement up and down with respect to the platform, and a support at the bottom of the shaft for arresting the downward movement of the sectional track, whereby the latter is thrown into alignment with the track on the platform when the cage is at the bottom of the shaft.

2. The mining-cage provided with a platform having a coal-chute arranged beneath and within the area of the same, so as not to interfere with the sides of the shaft, and a link mechanism connected to the car and to the chute for reciprocating the latter outwardly at the top of the shaft and for withdrawing the same upon the descent of the platform.

3. The combination of a shaft, a stationary piece arranged alongside thereof, a cage adapted to travel in the shaft, and a standard secured to the platform, provided with a pivotal lever having oppositely-projecting arms, one of which is adapted to come in contact with said piece on the side of the shaft and cause an upward movement of the opposite arm of the lever, thereby unlatching the gate of the car on the platform at a predetermined point.

4. The combination of a mining-cage, a platform, a sectional track upon the platform, adapted to be depressed with respect thereto when the cage is elevated, a chute beneath and within the platform, a link mechanism connected to the chute and to the cage for projecting and withdrawing the same, a supplementary frame pivotally connected to the cage, having a guide pulley or pulleys thereon, and a guide way or ways upon the sides of the shaft for guiding and deflecting the supplementary frame.

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

ERNEST SCHILLO.

Witnesses:

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P. RICHARD.