(No Model.)

# W. A. GIPSON & C. B. WHITE.

## SKIP FOR MINE SHAFTS.

No. 576,667. Patented Feb. 9, 1897.

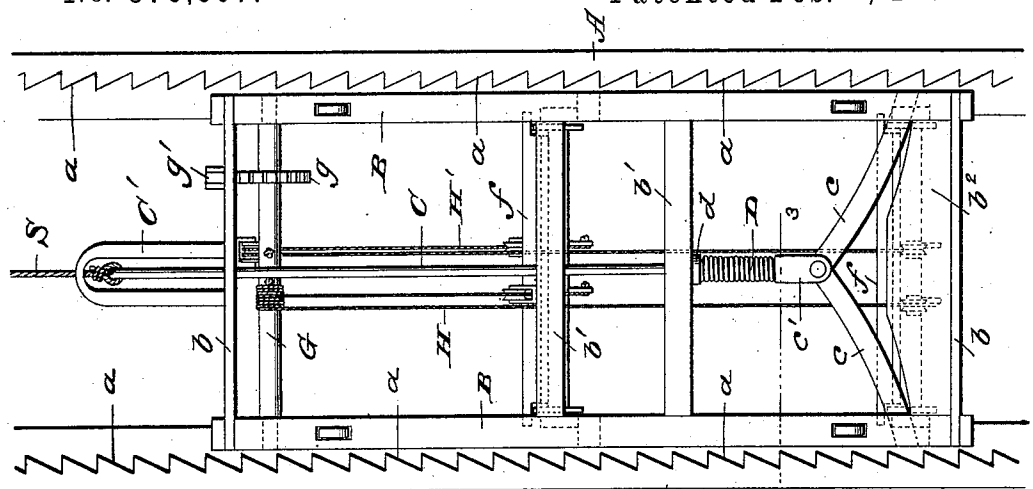

Fig. 2.

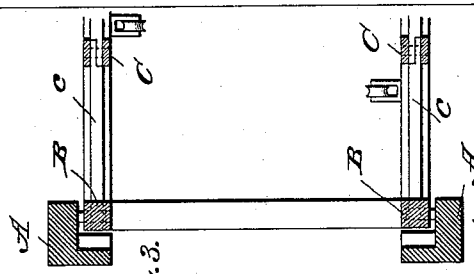

Fig. 3.



Fig. 1.

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# UNITED STATES PATENT OFFICE.

WILLIAM A. GIPSON AND CASABIANCA B. WHITE, OF CRIPPLE CREEK, COLORADO.

## SKIP FOR MINE-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 576,667, dated February 9, 1897.

Application filed September 19, 1896. Serial No. 606,377. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM A. GIPSON and CASABIANCA B. WHITE, citizens of the United States of America, residing at Cripple Creek, in the county of El Paso and State of Colorado, have invented certain new and useful Improvements in Skips for Mine-Shafts; and we do hereby 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 letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide an improved skip or elevator for mining-shafts which is so constructed as to present one or more sets of side rails, the upper edges of which are curved lengthwise in the segment of a circle to support trucks which will assume a horizontal position irrespective of the inclination of the said skip or elevator, the trucks being provided with rails to receive the cars, and means provided for holding the trucks in an adjusted position upon the curved rails.

With the above ends in view the invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a skip or elevator constructed in accordance with this invention, the skip being shown in an inclined shaft. Fig. 2 is an elevation with the skip or elevator in a vertical shaft. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 2.

A A designate the corner-guides of the skip-shaft, which are supported in the mine-shaft in any suitable manner. These guides are preferably angle-bars, and the inner edge of one member of each is provided with ratchet-teeth *a*, while the inner edge of the other member is plain to provide a bearing-surface for the friction-rollers of the skip or elevator.

The skip consists of four corner-posts B, which are connected to each other at top and bottom by plates *b*, intermediate cross-bars *b'*, *b'*, and $b^2$ being arranged at opposite sides of the skip, while the other two sides are provided with curved rails, hereinafter described, which support the movable trucks. The cross-bars $b^2$ are located at the lower end of the skip and are provided with oppositely-inclined upper edges to form guides for safety-catches *c c*, which are adapted to engage the ratchet-teeth *a* of the skip-shaft, said safety-catches being pivoted to the lower ends of a bail C, to which the hoisting and lowering cable S is attached. The side members of this bail C pass through vertical openings in the top plate *b* and intermediate cross-bars *b'*, and are provided with helical springs D, interposed between the lower cross-bars *b'* and couplings *c'* at the ends of said members, the tendency of said springs being to project the safety-catches should the cable S become broken. Instead of having the springs bear directly against the cross-bars *b'* loose collars *d* are interposed, as shown in the drawings. The upward movement of the bail C is limited by a looped bar C', secured to the upper plate *b*, and the cable S passes through an opening in the upper part of this bar.

Between the corner-posts of the skip, at opposite sides thereof, are rigidly secured cross bars or rails E, the upper edges of which are curved lengthwise in the segment of a circle, and these rails support movable trucks F, having flanged wheels which engage therewith. The platforms of the trucks F are provided with rails *f*, upon which the mining-cars are run in placing them upon said trucks. It will be here noted that by providing the curved supporting-rails for the trucks F said trucks will remain level or assume a horizontal position when the skip is working in a shaft that inclines either to the right or to the left, or in which the skip-shaft is vertically disposed.

In order to lock the trucks in proper position when the skip is used in connection with a particular form of shaft, either vertical or inclined, devices for this purpose are provided, consisting of a transverse shaft G, mounted or journaled in bearings secured to the upper part of the skip and provided with ropes or cables H and H', wound in opposite

directions thereon and connected at their ends to the said trucks after passing over suitable guide-rollers. By this arrangement when the shaft G is turned in one direction the cables H will be drawn upon and the cables H′ paid out, and vice versa when the shaft is turned in the other direction. It will be understood that the shaft is not turned manually but by the movement of the trucks in assuming their proper horizontal position. The shaft has a ratchet-wheel *g* mounted thereon, which is engaged by a pawl *g′*, carried by the top plate of the skip to hold the parts in an adjusted position and prevent the trucks moving upon the supporting-rails when the skip is being raised and lowered in the shaft.

With mining-shafts which are inclined this improved skip or cage is especially effective, as the cars containing ore or other material can be run from the drifts or tunnels directly onto the trucks, the latter being in a horizontal position and having their tracks on a line with the tracks of the drift or tunnel.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A skip or cage having cross bars or rails the upper edges of which are curved inwardly lengthwise and a movable truck or car mounted on said rails, substantially as shown and for the purpose set forth.

2. In combination with the skip or cage having curved supporting-rails, of a truck mounted on said rails, and means for adjusting the truck, carried by the skip or cage and connected to said truck, for the purpose set forth.

3. In combination with a skip or cage, of supporting-rails curved inwardly lengthwise, and trucks mounted on said curved supporting-rails and provided with rails, substantially as shown and for the purpose set forth.

4. In combination with a skip or cage having inwardly-curved supporting-rails and movable trucks mounted thereon, of locking means for said trucks consisting of a shaft having cables wound in opposite directions thereon and connected at their ends to the truck or trucks, a toothed wheel mounted on the shaft, and a ratchet in engagement with said toothed wheel, substantially as shown and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM A. GIPSON.
CASABIANCA B. WHITE.

Witnesses:
THORNTON H. THOMAS,
WILLIAM HARRIS.