Berry, Hochholzer & Denver,

Elevator.

No. 54,490. Patented May 8, 1866.

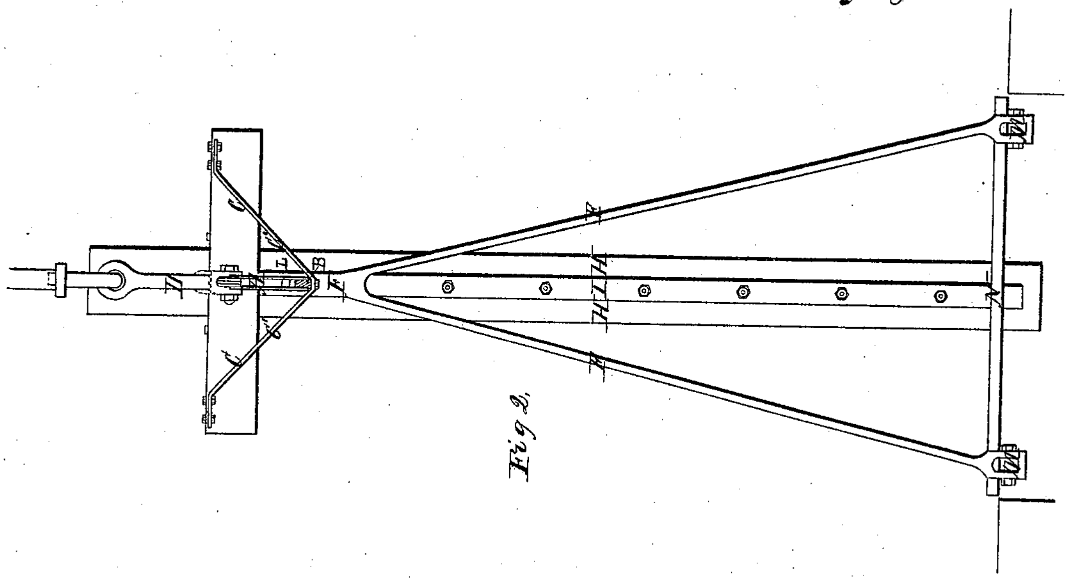

Fig 2.

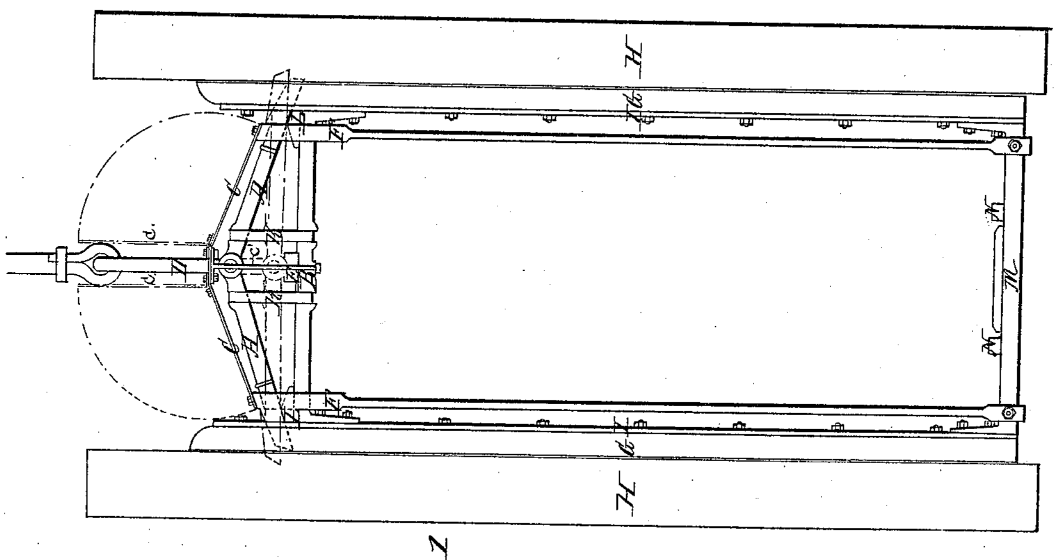

Fig 1

Witnesses.
Carl Alpe
J. W. Morgan

Inventors.
Henry Berry
Hugo Hochholzer
[illegible] Denver

UNITED STATES PATENT OFFICE.

HENRY BERRY, HUGO HOCHHOLZER, AND FRANK DENVER, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN CAGES FOR HOISTING PURPOSES IN MINES.

Specification forming part of Letters Patent No. **54,490**, dated May 8, 1866.

To all whom it may concern:

Be it known that we, HENRY BERRY, HUGO HOCHHOLZER, and FRANK DENVER, of the city of Virginia, county of Storey, State of Nevada, have invented certain new and useful Improvements in Safety-Cages for Hoisting Purposes in Mines, &c.; and we do hereby declare that the following specification, with the accompanying drawings, is sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use the same without further invention or experiment.

The nature of our invention relates to the employment of a platform for hoisting purposes, running upon ways or guides so arranged by means of springs that, should the rope by which it is suspended break, the springs draw the arms downward, causing their sharp beveled ends to be firmly planted into the wooden guides or ways and arresting the downward progress of the cage as soon as the lifting-rope is severed.

To enable others skilled in the art to make and use our machine for hoisting from mines, &c., we will proceed to describe its construction and operation, referring to the drawings, in which the same letter indicates like parts in each of the figures.

F F, Figures 1 and 2, represent arms made of round iron, both ends being flattened and squared, and having slots to receive at the bottom two pieces, M M, supporting the rails and plank N N.

Through the upper slot passes the head-piece B, which is, in turn, bolted to two wooden guides or ways, G G, (shown in Fig. 1,) the face of which is lined with flat iron and firmly bolted to the guides. The two arms A A pass through the same slot and are movable, having knuckle-joints, and are held together by a bolt and suspension-bar, D.

The two ends of the arms A A have the shape of hooks, so that when the two shoulders L L are inserted in the slot and between the head-piece B and the arms A A, thus preventing the latter from being drawn out of the slots.

The upper portions of the shoulders L L are beveled both ways, so as to give free movement to the arms A A, and are again fastened in the slot by two ears at the inside and by means of pins on the other side.

The head-piece B has on its center a pillow, E, made of copper, so as to receive the knuckle-joint of the arms A A when in action. Around these arms A A and head-piece B we place two india-rubber springs, K K.

The top of the large arms F F receive the cap C C, made of boiler-iron, the two sides being hung with hinges to the ridge, which, in turn, is supported by two braces, C′ C′, and firmly bolted down to the under side of the head-piece B, thus enabling the cap to be thrown open in case of long timbers being lowered into the mine.

The ridge has a square opening in the center, in order to pass through and give free movement to the suspension-bar D. This cap prevents the rope, should it break, from falling upon persons who may happen to be in the cage during its ascent or descent.

The operation of our machine is simply as follows: In case of hoisting a load, should the suspension-rope by any means become severed from the cage, the two india-rubber springs K K draw down the arms A A, thereby causing the sharp beveled ends with which they are provided to enter the wooden guides or ways which extend down to the bottom of the shaft or incline, the throw being about one and one-fourth ($1\frac{1}{4}$) inches on each side.

By this simple and ingenious contrivance it will be observed that the cage can be almost instantly stopped, while the weight of the cage and the load thereon only serves to secure the ends of the arms more firmly in the wood, as they act as two levers having for their pivots the shoulders L L.

In order to disengage the arms A A from the sides of the ways or guides, all that is necessary to do is to draw the machine upward, when the arms are released.

Having thus described our safety-cage, we will now proceed to state what we claim and desire to secure by Letters Patent, to wit:

1. The adjustable arms A A, india-rubber springs K K, or their equivalents, together

with the head-piece B, pillow E, and the beveled shoulders L L, in combination with the large arms F F and guides G G, substantially as described, and for the purposes set forth.

2. The cap C C, hung on hinges, in combination with the braces C′ C′ and head-piece B, substantially as described, and for the purposes set forth.

In witness whereof we have hereunto set our hands and seals this 15th day of June, A. D. 1865.

HENRY BERRY. [L. S.]
HUGO HOCHHOLZER. [L. S.]
FRANK DENVER. [L. S.]

Witnesses:
CARL AHPEL,
R. F. MORROW.