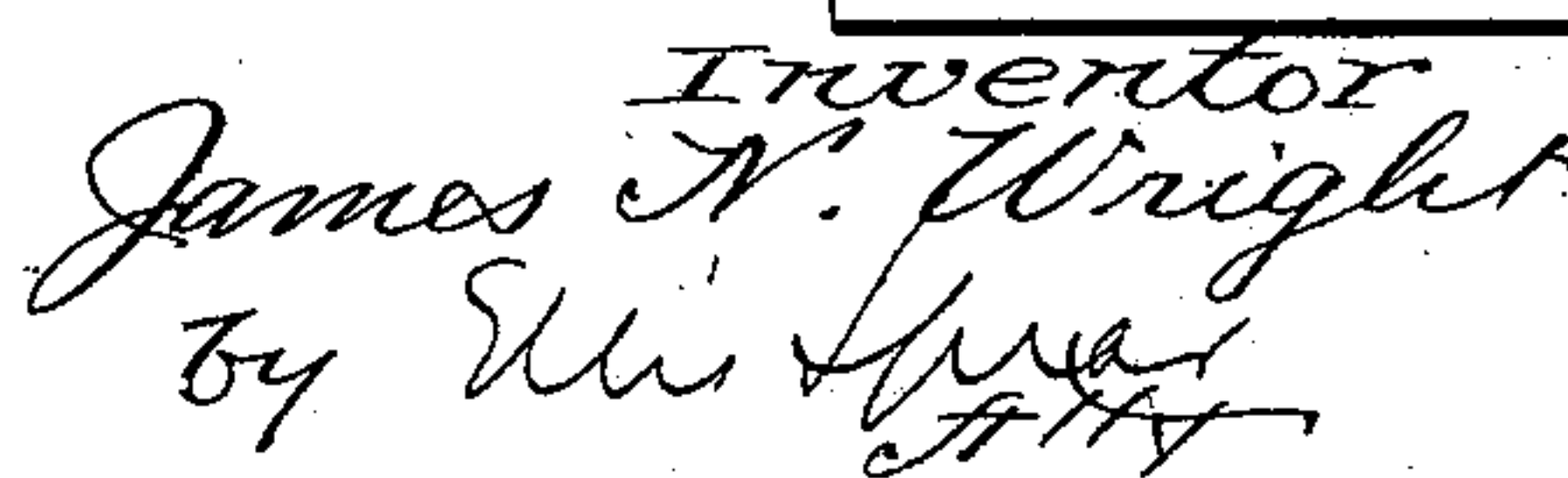


J. N. WRIGHT.
DUMPING CAGE.

Patented Nov. 13, 1894.



Attest
 Walter Madison
 J. L. Middleton

UNITED STATES PATENT OFFICE.

JAMES N. WRIGHT, OF QUINCY, ILLINOIS.

DUMPING-CAGE.

SPECIFICATION forming part of Letters Patent No. 529,227, dated November 13, 1894.

Application filed May 1, 1894. Serial No. 509,677. (No model.)

To all whom it may concern:

Be it known that I, JAMES N. WRIGHT, a citizen of the United States of America, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Dumping-Cages, of which the following is a specification.

My apparatus is intended especially for use in mining shafts, for elevating and dumping coal, ores and other materials automatically.

The object is to save the necessity of handling the car or vehicle containing the material being handled, and to empty the material without removing the vehicle from the platform of the elevating cage.

The elevating cage, is constructed to be raised and lowered, and is also arranged with corresponding parts so assembled as to permit of the platform of the cage being tilted forward to an angular position when the material is to be emptied. Devices are provided for holding the vehicle on the platform when the material is being dumped. All the parts of the elevating cage are so arranged that it becomes a fixed solid platform when not engaged with the tilting apparatus, as hereinafter explained.

In the accompanying drawings, forming part of this specification and to which reference is made to more fully explain the full construction and working of the cage in detail:—Figure 1, is an elevation representing my improved elevating cage as adapted to a mining shaft. Fig. 2, is an elevation of the elevator at right angles to Fig. 1. Fig. 3, is an elevation of the elevating cage in the shaft similar to Fig. 1, showing the position of the parts when tilting. Fig. 4, is a floor plan of the elevator, showing its position in the shaft, and its connection with the guides of the shaft. Figs. 5 and 6, are details of one of the tilting hooks.

A, represents the mine shaft, fitted with vertical guides A' which extend from the top to the bottom of the shaft, on which the cage frame engages and moves.

The frame of the cage is constructed with jaws A² on opposite sides, to engage with the guides in the shaft. Connected to the frame by means of the four strain rods a³ is a top cross-head A³ which is also provided with jaws a⁴ to engage with the guides in the shaft. At-

tached to the bottom frame K of the cage by means of the standards which I shall hereinafter explain, is the platform B, which is provided with rails b and other devices to conveniently fasten the car or vehicle thereon. On each side of the bottom frame K of the cage, are trunions or bearings C C to which the knees or links D D and E E are loosely pivoted, the upper or loose ends of the knees being loosely pivoted to the upper platform by means of the corresponding trunnions F F, knees being provided at four different points as shown by Figs. 1 and 2. At each corner of the frame K opposite to the vertical knees E E are standards G G which are firmly fastened to the frame.

By reference to Figs. 1 and 2, it will be seen that the platform B is thereby supported on the lower frame of the cage by resting on the vertical knees E at one end and the fixed standards G G at the other end. The knees D D Fig. 1, being at an angular position, prevent the platform from moving in any direction when the cage is not engaged with the tilting hooks I I. Near one end of the platform are lugs J J projecting out at each side of the platform for the purpose hereinafter explained.

Fastened to each side of the mine shaft and located at the point where the material is to be dumped are the tilting hooks I I. These hooks are pivotally connected to a plate i which has a groove i' arranged eccentric to the center of the plate or pivot of the hook. The hook is provided with a longitudinal groove or channel i² in which slides a bar i³ which has a projection i⁴ projecting into the groove. When the hook is extended in the horizontal position shown in dotted lines in Fig. 3, the bar is retracted and leaves the mouth of the hook open and free to receive the projection from the platform. The continued upward movement of the cage tilts the hook, and as it is swung around the projection i⁴ traveling in the eccentric groove causes the bar i³ to be pushed outward until its end passes behind the projection and prevents its disengagement therefrom until the cage begins to lower again.

Reference being made to Fig. 3, it will be seen that the projecting lugs J engaging with the hooks I I cause the platform to be drawn

forward by the hooks rotating on their axes, which movement causes the angular knees D D to rise forward to and past a vertical position, while the vertical knees E E are thrown forward to an angular position, thus raising the back end of the platform and lowering the front in such manner that the platform is tilted forward in an angular position. In this manner, the material to be emptied is thrown forward and emptied from the vehicle. It will be seen that when the cage frame is permitted to drop down, the back end of the platform will be lowered, and the platform will gradually shift back to its resting position on the cages, the end connected with the inclined links being supported by the fixed standards G.

By having the platform B which carries the car movable independent of the platform K the strength of the main frame is not interfered with, and with the platform B in its tilted position the main frame still maintains its full relation with the guides of the shaft, and when the platform is resting on the standards G G and the vertical knees E E and being held firmly to place by the angular knees D D it becomes a fixed and safe platform cage for workmen when riding on the cage.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an elevating and dumping apparatus, the combination with the main platform, of the supplemental platform, vertical and in-

clined links pivotally connecting opposite sides of the supplemental platform with the main platform, projections J. J, from the movable platform adjacent to the vertical links, and loosely pivoted hooks on the mine shaft for engaging said projections to move the cage laterally, substantially as described.

2. In combination, the main platform, the supplemental platform pivotally mounted thereon, vertical and inclined links, the rigid standard for normally supporting the portion of the supplemental platform connected by the inclined links, the projections from the opposite sides of said platform, and hooks loosely pivoted on the mine shaft for engaging said projections to move the cage laterally whereby the rear links are caused to assume a vertical position and the front ones inclined to dump the load, substantially as described.

3. In combination, the main platform, the tilting platform thereon, the projections from said tilting platform, and hooks on the mine shaft for engaging said projections, said hooks having sliding bars or latches automatically movable thereon to close the mouth of the hook and retain the projection therein as the hook is lifted, substantially as described.

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

JAMES N. WRIGHT.

Witnesses:

E. C. ALLEN,
J. J. ADAMS.