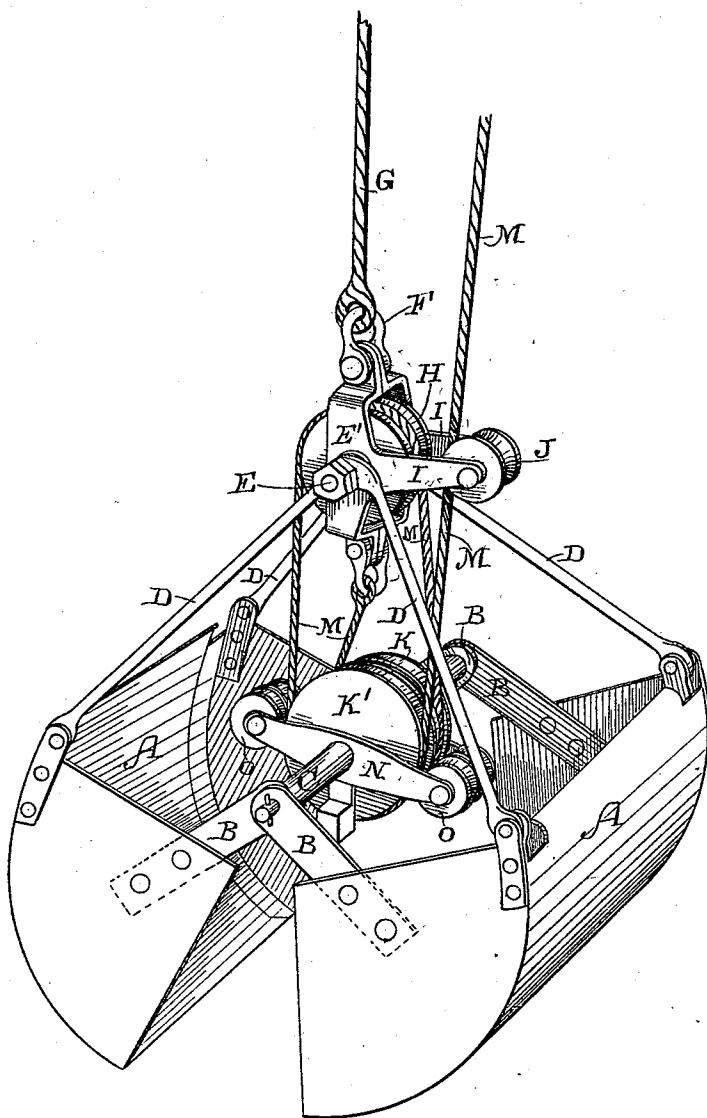


(No Model.)

W. G. CURTIS & J. D. ISAACS.
COAL HANDLING BUCKET.

No. 515,117.

Patented Feb. 20, 1894.



Witnesses,
G. H. Hulse
J. A. Bayless

Inventors,
William G. Curtis
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By Dwyer & Co.
all

UNITED STATES PATENT OFFICE.

WILLIAM G. CURTIS AND JOHN D. ISAACS, OF SAN FRANCISCO, CALIFORNIA.

COAL-HANDLING BUCKET.

SPECIFICATION forming part of Letters Patent No. 515,117, dated February 20, 1894.

Application filed August 30, 1893. Serial No. 484,397. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM G. CURTIS and JOHN D. ISAACS, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Coal-Handling Buckets; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to improvements in buckets, such as are employed for hoisting coal, dredging, and other similar purposes.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawing, in which the figure is a perspective view of our bucket, partially open.

The bucket consists of two segments A A which are approximately one-quarter of a cylinder in their outside periphery, and have quadrant-shaped ends, from the inner angles of which bars B extend, and are pivoted upon the ends of a shaft C. The outer angles of the bucket sections have pivoted to them by suitable connections the rods D which converge to a central point above the bucket, and are united by a stout pin E which passes through the meeting ends. To this pin is attached a yoke E' having a swivel shackle or attachment F for the connection of the hoisting rope or chain G. This yoke is sufficiently open to admit of a pulley H which fits therein and turns loosely upon the pin by which the suspending rods are united. Arms I extend to one side of the yoke and a guard pulley J is journaled between the ends of these arms, and serves to retain the pulley rope in proper position. Upon the central portion of the shaft C, which extends across and unites the inner angles of the buckets, are loosely journaled two independent grooved pulleys K and K'.

To the bottom of the yoke E', within which the pulley H turns, is an attachment for the pulley rope M. This rope has one end attached at this point, passes down thence around one of the pulleys K, thence up over the pulley H, thence down around the other pulley K', and thence up between the pulley H and the guard pulley J to the point from which the bucket is suspended and raised and lowered, and from which the suspending and pulley

ropes are actuated in a manner usual to this class of hoisting apparatus.

Upon each side of the pulleys K and K' are the bars N which turn loosely upon the shaft C, and have between the outer ends the guard pulleys O. These guard pulleys turn loosely upon their pins, and independently of each other in the same manner as the main pulleys K and K', and their peripheries are sufficiently close to the peripheries of the pulleys K and K', so that the parts of the hoisting rope are always retained in proper position upon the pulleys, and when the bucket is dropped and the pulley rope is slackened for the purpose of allowing the bucket to open by reason of its weight being suspended from the main rope G, the hoisting rope will not be thrown off the pulleys, but will always be retained in place and ready to operate. This is a matter of considerable importance in operating this mechanism.

When the bucket is suspended from the main rope G, the weight of the segments being suspended from the outer ends of the converging rods, and the pulley rope M being slackened, the central portion and the shaft C about which the bucket segments turn will drop, thus allowing the bucket to open so that when lowered into the material which is to be hoisted it will be fully opened as it rests upon the material. By slackening the hoisting rope and pulling up upon the pulley rope, the bucket will be closed with the force due to the compound pulley around which the rope passes, and the bucket is afterward hoisted and discharged in the usual manner.

The mechanism is simple and exceedingly effective.

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

1. In a hoisting bucket, the segmental sections, the converging suspending rods connected with the outer and upper angles of the bucket, a shaft above the inner angles of the bucket and converging connections therefrom to said inner angles so that the bucket may turn about said shaft, independent pulleys loosely journaled on said shaft and a single pulley mounted on a pin which unites the con-

verging suspending rods, a shackle and rope connecting with the upper ends of said rods, and a rope or chain around the pulley H, and around the independent pulleys on the bucket
5 shaft, substantially as herein described.

2. In a hoisting bucket, the segments having their inner angles connected and swiveling about a central shaft, converging rods loosely connected with the outer angles and
10 united by a pin at their meeting ends, a swivel shackle and hoisting chain connected with said pin, loose pulleys turning independently upon the shaft by which the inner angles of the bucket sections are connected, a hoisting

rope connected with the yoke of the upper 15 pulley, passing thence around the pulleys K, H and K', and guard pulleys O journaled with relation to the shaft pulleys so as to retain the pulley rope or chain in position thereon, substantially as herein described. 20

In witness whereof we have hereunto set our hands.

WILLIAM G. CURTIS.
JOHN D. ISAACS.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.