

No. 882,666.

PATENTED MAR. 24, 1908.

C. CHASE.
GRAB BUCKET.

APPLICATION FILED APR. 3, 1907.

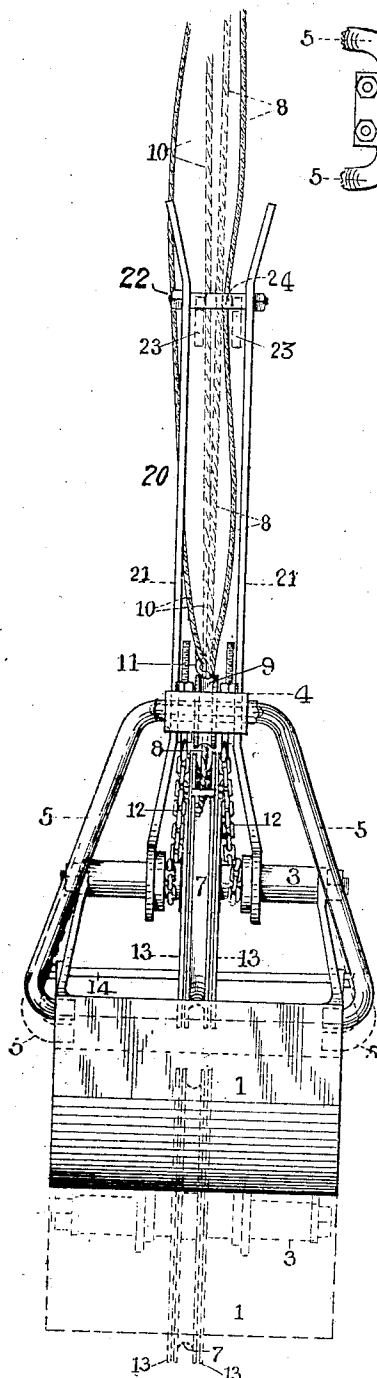


Fig. 2

Witnesses:
E. F. Amiac.
W. M. Morton

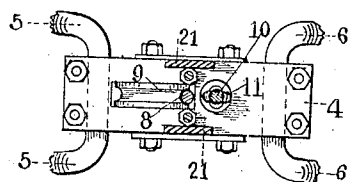


Fig. 3

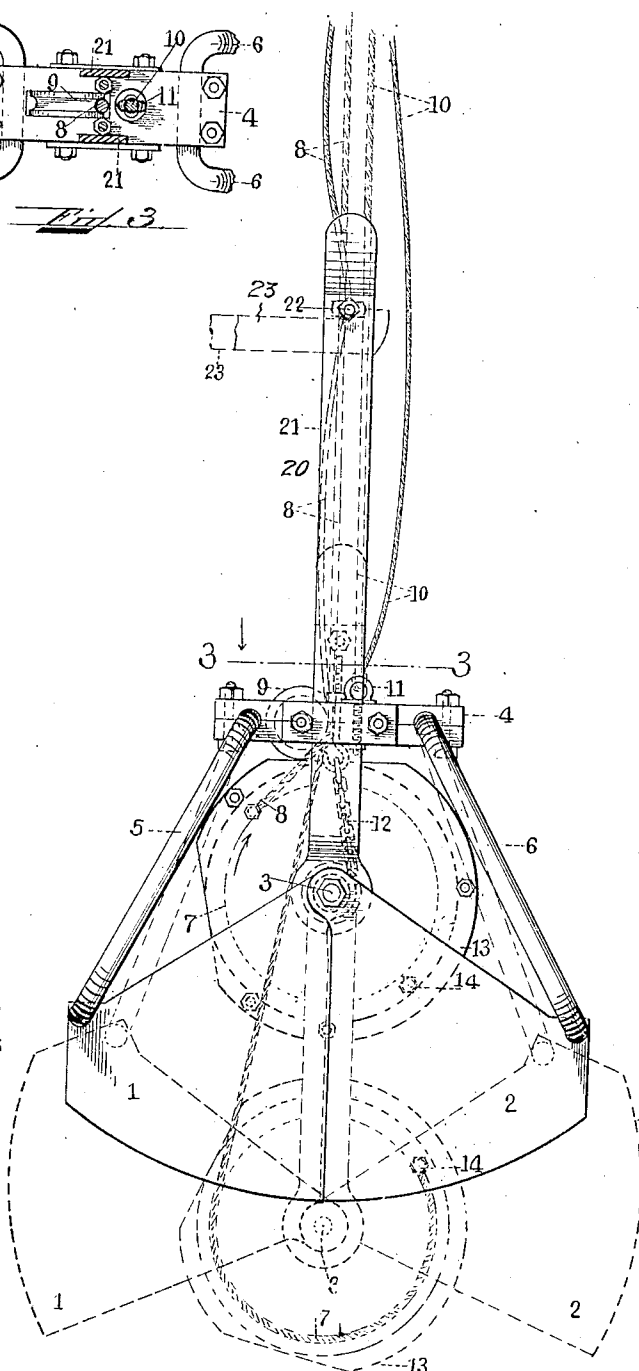


Fig. 1

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UNITED STATES PATENT OFFICE.

CLARK CHASE, OF FALL RIVER, MASSACHUSETTS.

GRAB-BUCKET.

No. 882,666.

Specification of Letters Patent.

Patented March 24, 1908.

Application filed April 3, 1907. Serial No. 366,090.

To all whom it may concern:

Be it known that I, CLARK CHASE, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Grab-Buckets, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to grab-buckets, and the object of said invention is to adapt a grab-bucket so that it may, unaided by either its hoisting rope or its dumping rope, hang from a support in a closed position; the weight of the grab-bucket tending to hold it in said closed position. I attain this object by providing a supporting bail and mounting it upon the jaw door shaft of the grab-bucket.

Figure 1 shows my invention, in front elevation, suspended from some supporting member, as a hook; the jaw doors being closed. The position assumed when the doors are open is shown in dotted lines. Fig. 2 is a side elevation; Fig. 3 is a detail, on section line 3—3, Fig. 1.

A common form of grab-bucket has two jaw doors 1, 2, mounted upon a shaft 3, and connected to a head member 4 by means of links 5, 6, pivoted to the jaws and the head member. Keyed to the shaft 3 is a jaw closing sheave 7, which in turn has fixed thereto a hoisting rope 8, leading over a sheave 9 in the head, and then to some suitable pulley or block overhead. A dumping fall or rope 10 is made fast to a ring 11 in the head, while chains 12, made fast to the head and to the jaw door shaft 3, about which it is wound, in a direction opposite to that of the hoisting fall 8 over the hoisting sheave 9. A guide shell 13 is mounted upon the jaw door shaft 3, and is operatively connected to the jaw door 2 by a bar 14; the shell incasing the sheave 7.

All of the apparatus above described is old, and its operation is well understood. It is plain, for example, that if the weight of the grab-bucket is sustained by the hoisting rope 8, shown in dotted lines, the dump rope 10 being loose, then the weight acting downward on the hoisting rope, tends to move the sheave 7 in the direction indicated by the arrow, in full lines, in Fig. 1; but the sheave being fast to the jaw door shaft 3, also tends to turn the shaft and wind thereon the chains 12, secured to the shaft and also to the head 4, but this shortening of the chains

draws the head and the shaft towards each other, the head acting on and through the links 5, 6, to push against the jaw doors 1, 2, and cause them to turn upon the jaw door shaft 3 and approach each other until their edges abut, and the doors are closed. In fine, it will be obvious that while the weight of the grab-bucket is borne by the hoisting rope, the weight acting through the hoisting sheave 7, the jaw door shaft 3, chains 12, head 4, links 5, 6, and jaws 1, 2, the jaw doors of the grab-bucket will remain closed. If, however, the hoisting rope 8 is loosening and the weight of the grab-bucket is sustained by the dumping rope 10, which is fast to the head 4, then the weight of the bucket acting downward through the jaw doors, causes the shaft to descend, thereby unwinding the chains 12, turning the sheave 7, and winding the hoisting rope thereon; the weight of the jaws being finally sustained by the links, head and dumping rope 10. In short, while the weight is borne by the hoisting rope, the grab-bucket remains closed, and when sustained by the dumping rope, the grab-bucket remains open.

The invention resides in the combination of a jaw door shaft, and means whereby said shaft may hang from a support, independently of the hoisting rope and the dumping rope. Said means are illustrated, for example, in a bail 20, in which is mounted the jaw door shaft 3. This bail consists of two side portions 21, movably secured in suitable guides in the head, and extending upwardly there-through; the top end portions, having a connecting bar 22 to be moved into and out of engagement with any suitable supporting member, as a hook 23. This bar 22 has an opening 24 therethrough for the hoisting rope 8, as for the purpose of preventing oscillating movements of the grab-bucket.

The operation of the grab-bucket, provided the bail is not in engagement with the hook, is actually the same as the operation of the parts of the old grab-bucket, heretofore described. Should, however, the bail be secured to a suitable support, as the hook, then the hoisting and dumping ropes may be loosened, as shown in full lines, the weight of the bucket be borne by the bail, and the jaw door shaft. The jaw doors of the bucket, being pivoted to the jaw door shaft, and all of the parts being free to move, their weight tends to close the doors of the bucket. When the bucket is thus sustained, plainly the

hoisting rope and the dumping rope are idle, and may be employed to perform any function for which they are adapted.

While the bucket is off its support, the opening and closing of the bucket and the raising and lowering of the bucket, are the same as heretofore described and commonly understood. If, however, while the bail is in engagement with its hook and is sustaining the weight of the bucket, it is desirable to open the bucket, then by hoisting the dumping rope 10, and by allowing the hoisting rope to remain loose, the upward movement of the head together with the links, permits the jaw doors to move about the jaw door shaft as a pivot, and therefore to open.

My invention is of great utility, and especially so when used in connection with a movable carriage which may be locked to its supporting member, as a trolley, and then unlocked therefrom; the hoisting rope or the dumping rope, or both, while the grab-bucket is locked to the carriage, being adapted to be used for moving the carriage from place to place along its support; and when the carriage is locked to its support, then the hoisting rope and the dumping rope can be put to their usual uses.

In conclusion, while the ordinary grab-bucket is held closed simply because the weight of the bucket is borne by the hoisting rope, and is held open when the weight of the bucket is borne by the dumping rope, yet it

has no means whereby either one or both of said ropes may be employed for a purpose different from that of sustaining the bucket either in an open or a closed position. My invention supplies such means.

It is to be understood that all persons skilled in the art to which this invention appertains, once knowing the principle of my invention, can embody the same in many different forms without departing from the spirit thereof; I, therefore, desire to protect my invention in the broadest manner legally possible.

What I claim is:—

1. In a grab-bucket, the combination of a jaw door shaft and a bail, for the purpose of holding said jaw doors closed, while the bucket is supported through the bail; the hoisting rope and dumping rope of the grab-bucket being left free to be used for a purpose other than that of sustaining the weight of the bucket.

2. In a grab-bucket, a head, a jaw door shaft, a bail mounted in suitable guides in said head, and having therein bearings for said jaw door shaft.

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

CLARK CHASE.

Witnesses:

JAMES H. KENYON, Jr.,
J. T. FYAUS.