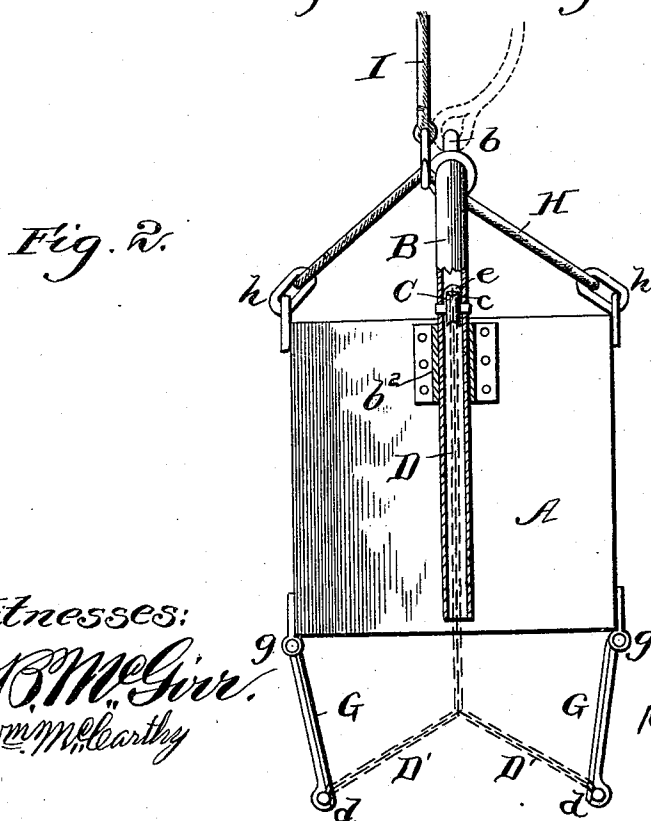
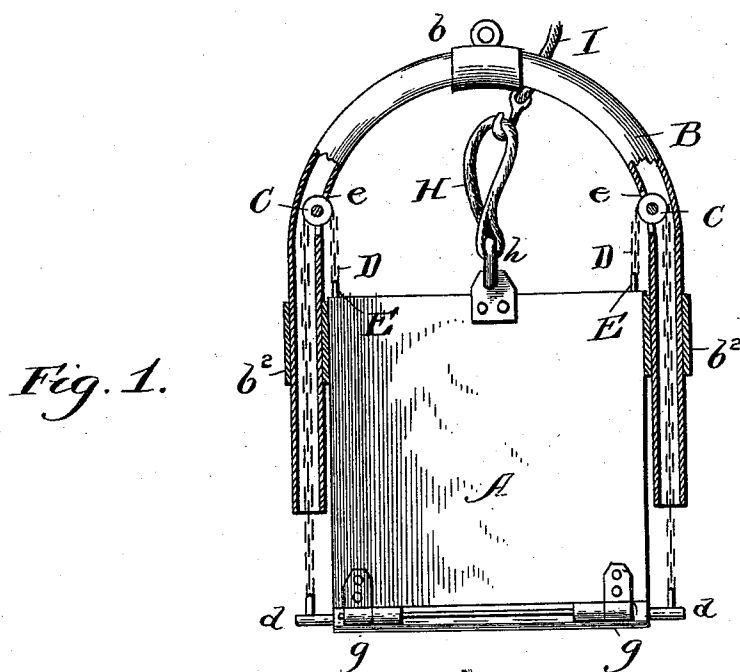


(No Model.)

A. N. SIMMERLY.
AUTOMATIC DUMPING BUCKET.

No. 506,081.

Patented Oct. 3, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALBERT N. SIMMERLY, OF CLEVELAND, OHIO.

AUTOMATIC DUMPING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 506,081, dated October 3, 1893.

Application filed March 27, 1893. Serial No. 467,820. (No model.)

To all whom it may concern:

Be it known that I, ALBERT N. SIMMERLY, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Drop-Bottom Dumping-Buckets, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to dumping drop bottom buckets and particularly to those used in transferring coal, coke, &c.

The object of the invention is to produce a drop bottom dumping bucket having a maximum capacity considering its dimensions and that will automatically discharge its contents, regain its normal position and be ready for the reception of another load after the preceding one has been disposed of; furthermore, to have the device adjustable so that the automatic action will take place at a predetermined point of travel, at the same time providing for prompt dumping and certain and safe re-adjustment for further action; furthermore, to so construct the same that a minimum wearing of the parts is produced, making them at the same time readily removable to renew those worn by use, and to so arrange the parts that the bucket may be lowered to within a few feet of the place upon which the load is to be deposited, thereby insuring against the waste and breakage which would result from a distant precipitation; furthermore, the invention contemplates the production of a bucket that shall be simple of construction, efficient and satisfactory in use as well as comparatively inexpensive of manufacture, and finally the invention consists in various novel details of construction, combinations and arrangements of parts, to be hereinafter more fully described and specifically pointed out in the claims.

With these objects in view the invention consists in a square, oblong or cylindrical bucket provided with a loosely mounted tubular bail with suitable means for attaching it to the hoisting chain or rope. In this tubular bail are mounted sheaves with approximately U-shaped grooves which engage a chain or other suitable flexible supports passing through an aperture in the inner wall of the bail. The chain is attached to the top of

the bucket in line with the bail, and passing through the aperture in the bail and over the sheave, emerges at the bottom thereof. The bottom part of this chain on each side is made in two sections emerging from the main one; these sections being attached to the cross pieces which support the hinged bottom. This bottom is composed of two sections hinged to the sides of the bucket joining in the center, each door being held by cross pieces and the chains above referred to. Running at right angles with the bail and secured on the outer wall of the bucket in any suitable manner is provided a support which is engaged by the trip line to suspend the bucket while the dumping is effected.

In describing my invention in detail, reference is had to the accompanying drawings forming part of this specification wherein like letters of reference indicate corresponding parts in both the views, in which—

Figure 1. is a front view of my improved dumping bucket, partly in section. Fig. 2. is a side view of the same which is also partly in section.

In the drawings, A, indicates the walls of the bucket proper, and B, the loosely mounted bail provided with the eye *b*, to which the hoisting chain or rope is secured, said bail working in the guides *b*²; mounted in the tubular bail is the sheave C, with the U-shaped groove *c*, which engages the chain D, secured to the sides of the bucket by means of the fastening E, at one end and running through the aperture *e*, in the tubular bail and emerges therefrom as shown. At a suitable point corresponding in length are attached to a link of the main chain; shorter chains D, D, which form the support for and are attached to the cross pieces *d*, *d*, of the bottom G, G, hinged at *g*, *g*.

H, indicates the support secured at *h*, which engages the trip line I. It will be obvious that, when the bucket is loaded and supported by the bail B, the action of the chains will firmly support the bottom and that as soon as the length of the trip line is reached and the hoisting rope or chain is slackened, the weight will bear on the trip line, thereby loosening the hoisting line, and allowing the bail and bottom to descend, discharging its contents.

It will be particularly noted that various changes may be made in the detail construction of the device without departing from the general idea involved; and while I use chains for supporting the bottom, it will be understood that rope, cable, or other suitable material may be substituted without departing from the spirit of my invention.

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

1. In a dumping bucket, the combination of the walls, the support engaged by the trip line, the hinged bottom the chain or connection fastened thereto and the loosely mounted bail, substantially as described.

2. In a drop bottom dumping bucket, the combination of the walls, the support engaged by the trip line, a loosely mounted tubular bail, sheaves mounted therein, a chain or other support engaging said sheaves and the hinged bottom, as specified.

3. In a dumping bucket, a loosely mounted tubular bail, sheaves carried thereby, the

hinged bottom and flexible connections engaging said sheaves and supporting said bottom, substantially as described.

4. In a dumping bucket, a loosely mounted tubular bail provided with an aperture, the sheaves in the bail, the hinged bottom, the cross piece attached thereto and supported by a flexible connection, substantially as described.

5. In a drop bottom dumping bucket, the combination of the trip support, the loosely mounted tubular bail having an aperture therein, sheaves carried thereto the cross pieces *d, d*, the flexible bottom support connected with the walls, engaging the sheaves and attached to the cross pieces, *d, d*, substantially as described.

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

ALBERT N. SIMMERLY.

Witnesses:

HARRISON J. EWING,
J. C. LOWER.