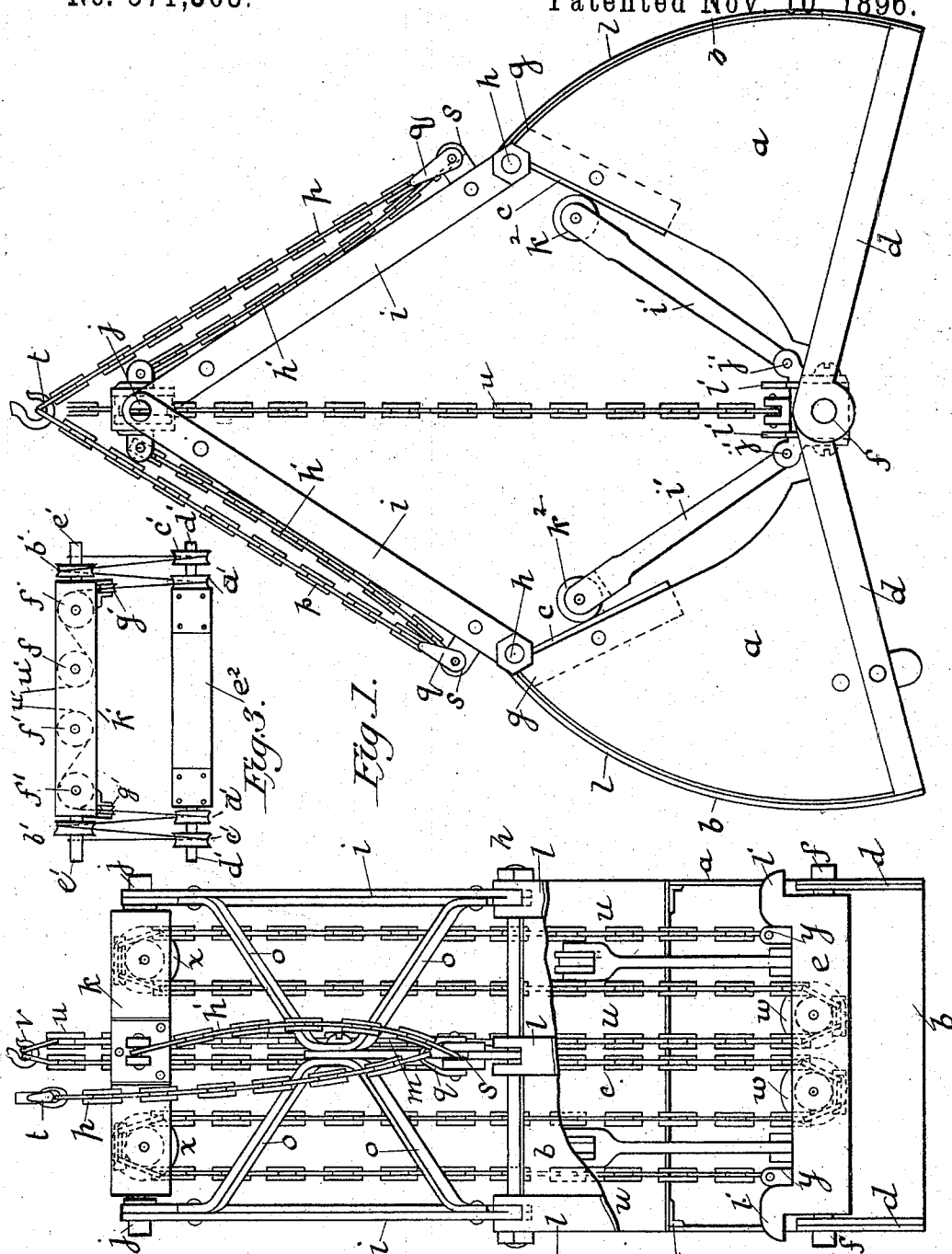


(No Model.)

C. EIBEE.
COAL BUCKET.

No. 571,303.

Patented Nov. 10 1896.



WITNESSES.

Ch. Morgan
E. H. Morgan

INVENTOR.

Carl Eibee
By A. P. Thayer
att.

UNITED STATES PATENT OFFICE.

CARL EIBEE, OF BROOKLYN, NEW YORK.

COAL-BUCKET.

SPECIFICATION forming part of Letters Patent No. 571,303, dated November 10, 1896.

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To all whom it may concern:

Be it known that I, CARL EIBEE, of Brooklyn, Kings county, New York, have invented a new and useful Improvement in Coal-Buckets, of which the following is a specification.

My invention consists of improvements in the construction of coal or dredge buckets, whereby it is designed to provide simpler and more efficient buckets, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved bucket as when open and falling to the place for taking a load. Fig. 2 is an elevation of the same in the same condition in a view at right angles to that of Fig. 1 and with one of the parts of the scoop broken out; and Fig. 3 is a detail in side elevation, showing a modification of some of the parts.

The scoop consists of the usual two half parts, of which *a* represents the sides, *b* the curved bottoms, and *c* the plates partly covering them at the top. They are pivoted by the bars *d* to the lower cross-head *e* at *f*, said bars being the reinforcing parts of the meeting edges of the sides and bottoms of the said two parts of the scoop.

The outer extremities *g* of the two parts of the scoop are respectively pivoted at *h* to the lower extremities of the truss-bars *i*, which at their upper extremities are pivoted at *j* to the upper cross-head *k*, making a toggle-jointed arrangement, whereof the two cross-heads are the extremities and the two parts of the scoop and the bars *i* are the links.

The pivots *h* consist of strong rods extending from side to side of the scoop through eyes of the forked strengthening-ribs *l* of the bottom of the scoop, also through the bars *i* and at the middle extending through the short bar *m*, which is parallel to bars *i* for about half their length or a little more and at the upper end joined to the bent stays *o* at their middle, said stays being fastened at the ends to the bars *i* in a manner to form a strong truss to sustain the powerful thrusts consequent to the opening of the bucket by the chains *p*, which are connected to the bars *m* near their lower extremities by the yokes *q* and blocks *s*, said chain being suspended at *t* from the chain working on the boom and hoisting-drum in the usual manner for

opening the bucket. The said trusses also sustain the stresses of the bucket closing and hoisting chain *u*, suspended from the other boom-chain, as at *b*, and extended down through the upper cross-head *k* around sheaves *w* in the lower cross-head, thence up over sheaves *x* in the upper cross-head, and then down again to the lower cross-head, to which they are secured at *y* in a double-sheave arrangement, affording great power in closing the bucket by drawing the head-blocks toward each other and thereby powerfully thrusting on the extremities *g* of the bucket by the said trusses, consisting of the bars *i o m*, and thus forcing the meeting edges of the two parts of the scoop together; but a substantially similar arrangement of sheaves may consist of sheaves *a'* and *c'* on the pivot-stems *d'* of the lower cross-head *e'* and sheaves *b'* on the pivot-stems *e'* of the upper cross-head *k'* with guide-pulleys *f'* in the upper cross-head, under and over which the chains *u'* are directed from the middle of said cross-head outward toward the ends suitably to pass first under sheaves *a'*, thence up over sheaves *b'*, thence down under sheaves *c'*, and thence up to pivot-stems *e'*, to which they may be secured, as in Fig. 3, with other guide-pulleys *g'* directly under the upper cross-head to keep the chains in line with pulleys *f'* when the cross-heads are near each other and the angular direction of the chains between sheaves *f'* and *a'* would tend to throw the chains off from sheaves *f'*.

It will be seen that the cross-heads, having only the pivotal connection *j* with the bars *i*, which also have the like pivotal connections *h* with the two parts of the scoop, will be liable to roll to one side or the other by the shocks and by various different movements to which the bucket is subject, so as to interfere to some extent with the proper running of the chains *u* on the sheaves in them. I have therefore connected the upper cross-head *k* with the blocks *s* at the lower extremities of the trusses by the chains *h'*, to prevent it from turning, and to the lower cross-head *e* I have pivoted the bar-weights *i'* at *j'*, said bar-weights extending over the tops of the two parts of the scoop and having rollers *k'* to roll thereon, as they move relatively to each

other, owing to the different centers whereon they are pivoted. These bar-weights tend to maintain the cross-head *e* in its proper upright position when the chains *u* are slack.

5 To limit the opening of the scoop, the lower cross-head has the spurs *l'* projecting at its ends over the reinforcing-bars *d* of the edges of the sides of the scoop, so as to come to a stop thereon when opened to about the position
10 shown in Fig. 1, and prevent further opening.

By the simple arrangement of the two parts of the buckets in the toggle-jointed connection with the two cross-heads, by means of
15 the trusses and by the arrangement of the opening-chains, and the closing and hoisting chains therewith a very efficient bucket is provided of much simpler construction than others now in use.

20 I claim—

1. The combination of the two parts of the scoop, the lower cross-head having the said two parts of the scoop pivoted to it, the truss-frames pivoted to the outer extremities of the
25 said two parts of the scoop, the upper cross-head having the truss-frames pivoted to it, the opening-chains attached to the trusses at or near their lower extremities and the closing and hoisting chains attached to the lower

cross-head and traversing the sheaves in the upper and lower cross-heads substantially as described. 30

2. The combination with the upper cross-head, the truss-frames pivoted thereto, the closing and hoisting chains, and the sheaves
35 in said cross-head for said chains, of the cross-head-controlling chains connected to it and to the truss-frames substantially as described.

3. The combination with the two parts of the scoop, the lower cross-head, the closing
40 and hoisting chains and the sheaves in said cross-head for said chains, of the bar-weights pivoted to the cross-head and bearing on the two parts of the scoop respectively substantially as described. 45

4. The combination of the lower cross-head, the bucket-opening stop-spurs projecting from the extremities of the cross-head, and the two parts of the scoop pivoted to the said cross-head, said scoop pivoted at the outer
50 extremities to the truss-frames, and said truss-frames pivoted to the upper cross-head with opening-chains and closing and hoisting chains, all substantially as described.

CARL EIBEE.

In presence of—

W. J. MORGAN,
S. H. MORGAN.