

(No Model.)

2 Sheets—Sheet 1.

C. EIBEE.  
COAL OR DREDGE BUCKET.

No. 427,980.

Patented May 13, 1890.

Fig. 1.

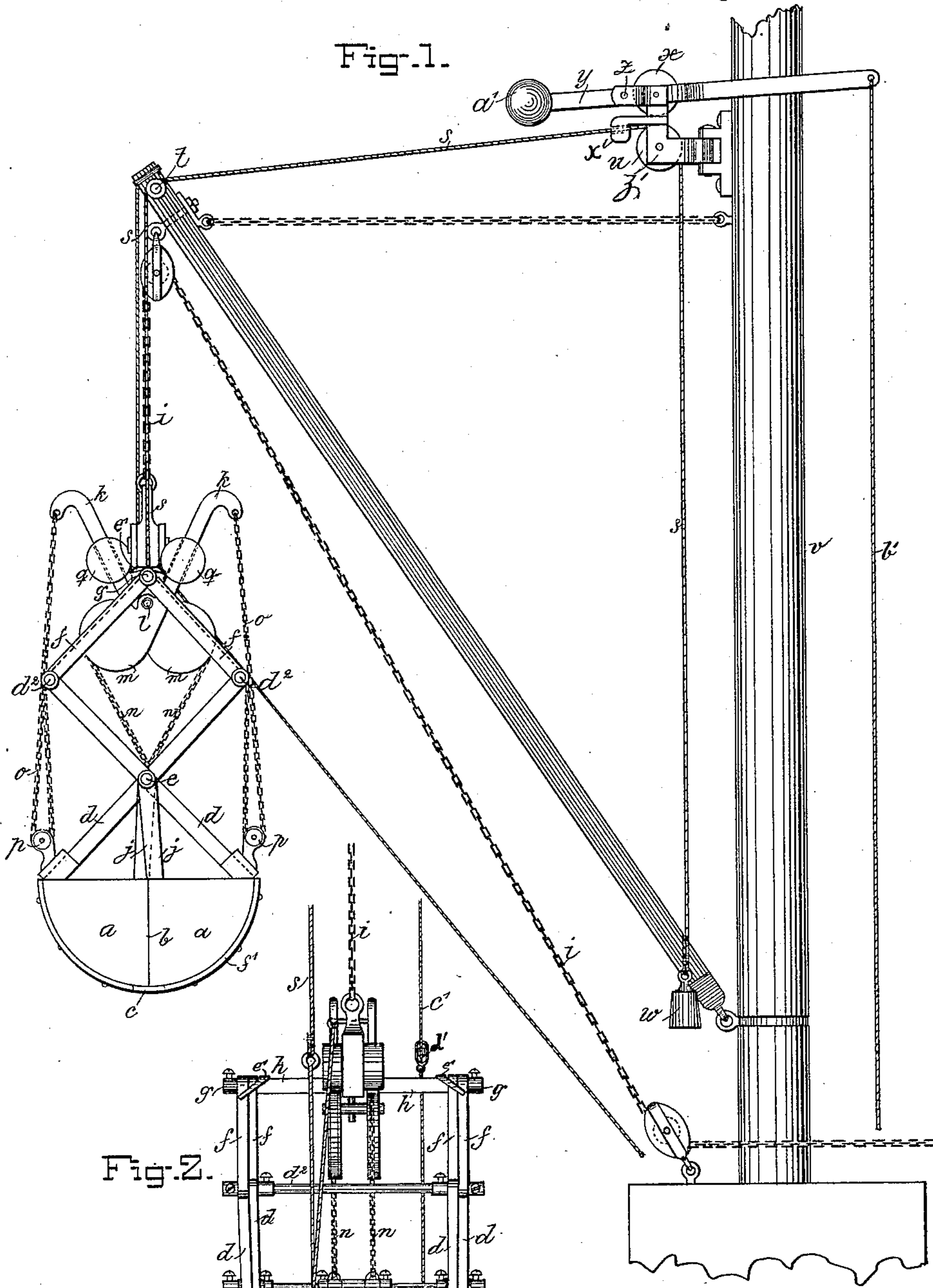
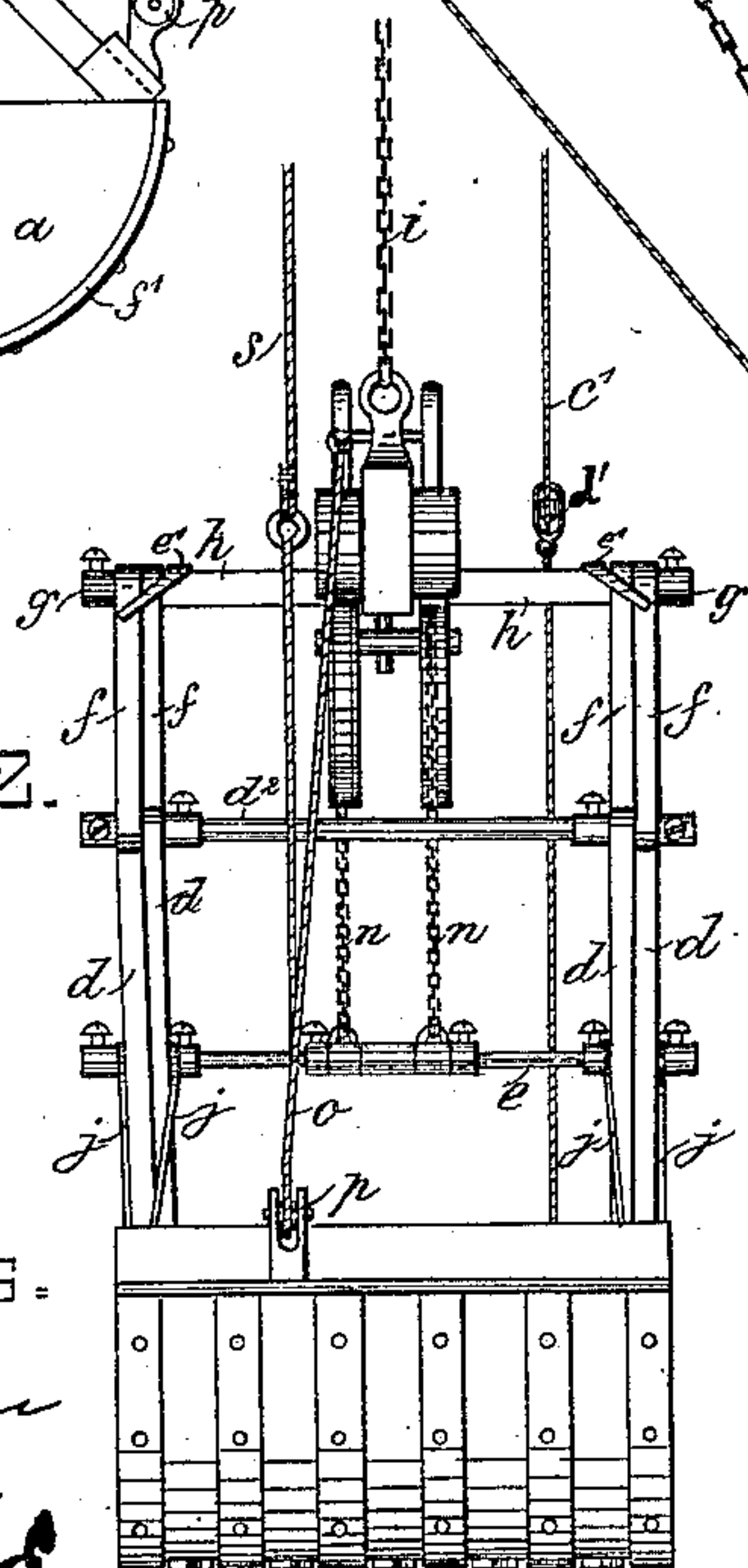


Fig. 2.



WITNESSES:

*W. J. Morgan*  
*Wilfred D. Carr*

INVENTOR:

*Carl Eibee*

*By A. P. Mayer*

*his Attorney*

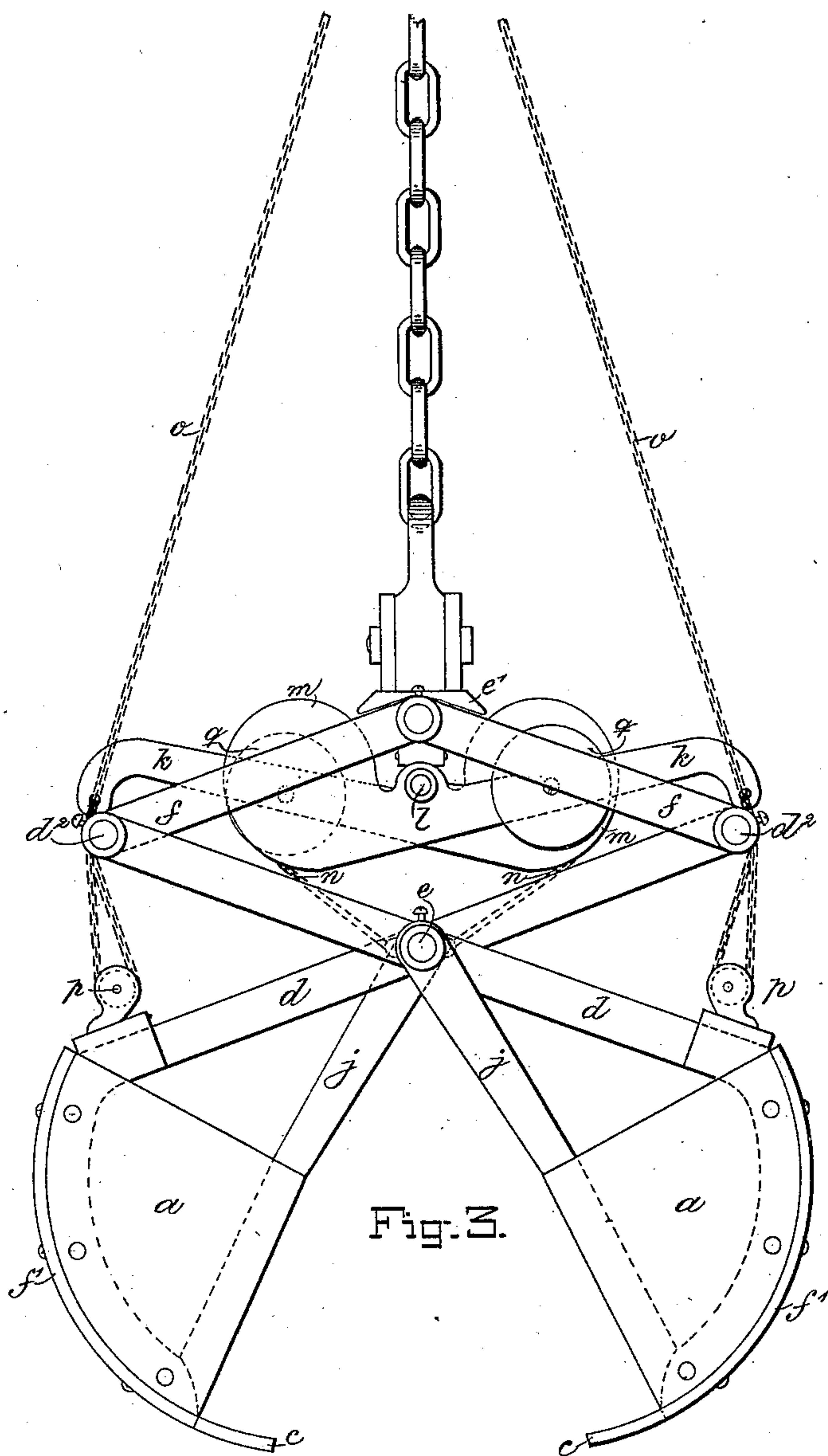
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*Wilfred D. Cull*

INVENTOR.

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By *A. P. Hayer*

*his Attorney*



# UNITED STATES PATENT OFFICE.

CARL EIBEE, OF BROOKLYN, NEW YORK.

## COAL OR DREDGE BUCKET.

SPECIFICATION forming part of Letters Patent No. 427,980, dated May 13, 1890.

Application filed September 9, 1889. Serial No. 323,464. (No model.)

*To all whom it may concern:*

Be it known that I, CARL EIBEE, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Coal or Dredge Buckets, of which the following is a specification.

My invention consists of improved jointed-link mechanism suspending the bucket from the hoisting-chain and means for working the same to open the bucket; also certain details of the apparatus, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved bucket and the working apparatus. Fig. 2 is a front elevation of the bucket. Fig. 3 is a side elevation of the bucket on an enlarged scale and opened as for scooping up a load.

The bucket consists, essentially, of the ordinary scoop device made in two parts *a*, meeting together at the vertical line *b* when closed, except that I provide the meeting edges of the bottom with intermeshing prongs or teeth *c*, which, by entering the coal when in lumps of large size in advance of the plain edges of the bottom plates, displace the lumps better than such plain edges do, and by preventing them from closing on a lump insure the closing of the bucket more effectually than without such prongs. I connect the said parts of the bucket at the upper outer corners to the long bars *d*, respectively, of the lazy-tongs-extension device, consisting of said bars pivoted together at the middle and also to the shaft *e*, and the shorter arms *f*, pivoted to the outer extremities of arms *d* and to the shafts *d'* thereat, and also pivoted at *g'* to the cross-head *h*, and being in duplicate for each end of the bucket, and the cross-head being suspended at the middle from the main hoisting-chains *i*. The inner extremities of the parts *a* of the buckets are hung from shaft *e* by the arms *j*. Under the cross-head *h* and near the middle of it I hang the levers *k* on pivots *l*, ranging transversely to the bucket and oppositely to each other as to their long and short arms, said levers having chain-drum terminals *m* of the short arms connected by chains *n* with the shaft *e*, and the long arms each have one end of a chain *o* connected thereto, which chain extends

therefrom downward around the pulley *p*, thence upward over cross-head *h* and down to the pulley *p* and levers *k* of the other side. The levers *k* have adjustable weights *q* to vary the balance as required.

From the bight of the chain a cord or light chain *s* extends up over the pulley *t* on the boom or gaff, and the pulley *u* on the post *v*, or the side of the coal-house, as the case may be, and hangs therefrom with a weight *w*, capable of keeping the cord or chain *s* taut and rising and falling freely as the bucket descends and rises.

Over the pulley *u* is a friction-pulley *x*, carried in a lever *y*, pivoted at *z* and having a weight *a'* to normally hold the friction-pulley off the cord *s*, with a cord *b'* hanging from the end of the opposite long arm to the position of the attendant, whose business it is to cause the opening of the bucket at the proper time for scooping up the load and for discharging it, which with my improved apparatus he accomplishes by pulling lever *y* down so as to grip and hold cord *s* between pulleys *u* and *x*, so as to stop the running of cord *s* at any time when the bucket is descending—for example, just before the bucket reaches the coal in the hold of the lighter, and when it reaches the point for opening to discharge into the coal-pocket or into the truck for carrying the coal away to the pocket in another location.

It will be seen that the chain *o*, passing around the pulleys *p* and connecting to the long arms of levers *k*, has leverage thereon proportionately to the difference of the movements of the chains and levers which tends to open the bucket by direct action on the back of the parts *a*, and this is multiplied by the action of the short arms *m* and chains *n* of levers *k*, to contract the lazy-tongs device by drawing shaft *e* and cross-head *g* toward each other as a further means of opening the bucket by the swing of levers *d* on shaft *e*, so that a slight grip of the cord *s* by pulleys *x* and *u* will effect the opening, and this is further facilitated by the weight *q*, which may be set on the levers so as to nearly balance the closing effect of the weight of the bucket, the overbalance being sufficient to close and to keep it closed to retain the load while hoisting it.



The chain *o* of Figs. 1 and 3 is represented as a cord or rope in Fig. 2, either of which may be used, as preferred. To prevent the bucket from turning around and twisting the chain *i* while being hoisted or lowered, and also to prevent it from swinging, I have provided a steady-cord *c'*, hanging from the upper end of the gaff through a guide-pulley *d'*, placed laterally to the suspending-chain on the cross-head *h* and to the ground or deck, where, by the lower end, the deckman can control the bucket both as to swinging and turning. This is a better arrangement than that in which the cord is attached directly to the bucket, because there is less running of the cord through the hands of the deckman. On the cross-head I place the guard-caps *e'*, extending each way from the cross-head over the bars *f* of the jointed-link mechanism for stops to limit the contraction of the link device and the opening of the bucket, and also to maintain the cross-head centrally over the rest of the bucket and thereby aid in keeping the bucket upright when it drops onto the coal bed, whereon it is apt to tilt to one side in consequence of one side lodging on a higher elevation of the coal pile than the other side, in which case the outer extremities of the guards *e'*, bearing heavier on the links *f* of the higher side, tend to right the bucket, and in any case they prevent the opening of the bucket too much.

The prongs *c* of the closing edges of the bucket consist of projecting ends of strengthening-bars *f'*, extending across and riveted to the bottoms of the parts *a* of the bucket at suitable intervals along the same and so that said prongs intermesh suitably for closing.

It is to be understood that the opening-chain may be worked by a cord running directly from it over suitable guides to the position of the operator, said cord being taken up and let out by the operator as the bucket rises and falls, and I mean to use such device when desired, but of course the weighted cord and tripper which I have devised for this purpose are better. The tripping-lever *y* and pulleys are mounted on a swinging bracket *z'*, which turns with the gaff, and the bracket carries a cord-guide *x'* to keep cord *f* on pulley *u*. Guide-pulley *t* may also be mounted on a swinging bracket, if desired.

I claim as my invention—

1. The combination, with the bucket composed of two parts suspended from the cross-head by the bars and links, as described, of

the opening-levers suspended from the cross-head and connected to the pivot-shaft and to the opening-chain, respectively, and said opening-chain extended around the pulleys on the bucket and over the cross-head, substantially as herein set forth.

2. The combination, with the bucket composed of two parts suspended from the cross-head by the bars and links, as described, of the opening-levers suspended from the cross-head and connected to the pivot-shaft, the opening-chain connected to said levers and extended around the pulleys on the bucket and over the cross-head, and the trip cord connected to said opening-chain and extended over a pulley on the gaff, from which the bucket is suspended, to the operator's station.

3. The combination, with the trip-chain, opening-chain, opening-levers, and bucket, arranged substantially as described, of the weighted trip-cord attached to the opening-chain and extending over the guide-pulleys, and the grip-lever and cord, said cord extending to the operator's position, substantially as specified.

4. The combination, with the bucket composed of two parts suspended from the cross-head by the bars and links, as described, of the opening-levers suspended from the cross-head and connected to the pivot-shaft and opening-chain, respectively, and the adjustable weights on the opening-levers, said opening-chain extended around the pulleys on the bucket and over the cross-head, substantially as herein specified.

5. The combination, with the bucket composed of two parts suspended from the cross-head by the links and bars, as described, of the guard-caps on the cross-head limiting the opening of the bucket, substantially as herein specified.

6. The combination, with the bucket, of the steady-cord suspended from the gaff and extended through the pulley placed laterally to the suspending-chain on the cross-head to the position of the attendant on the deck, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 17th day of August, 1889.

CARL EIBEE.

Witnesses:

WILFRED B. EARLL,  
W. J. MORGAN.