

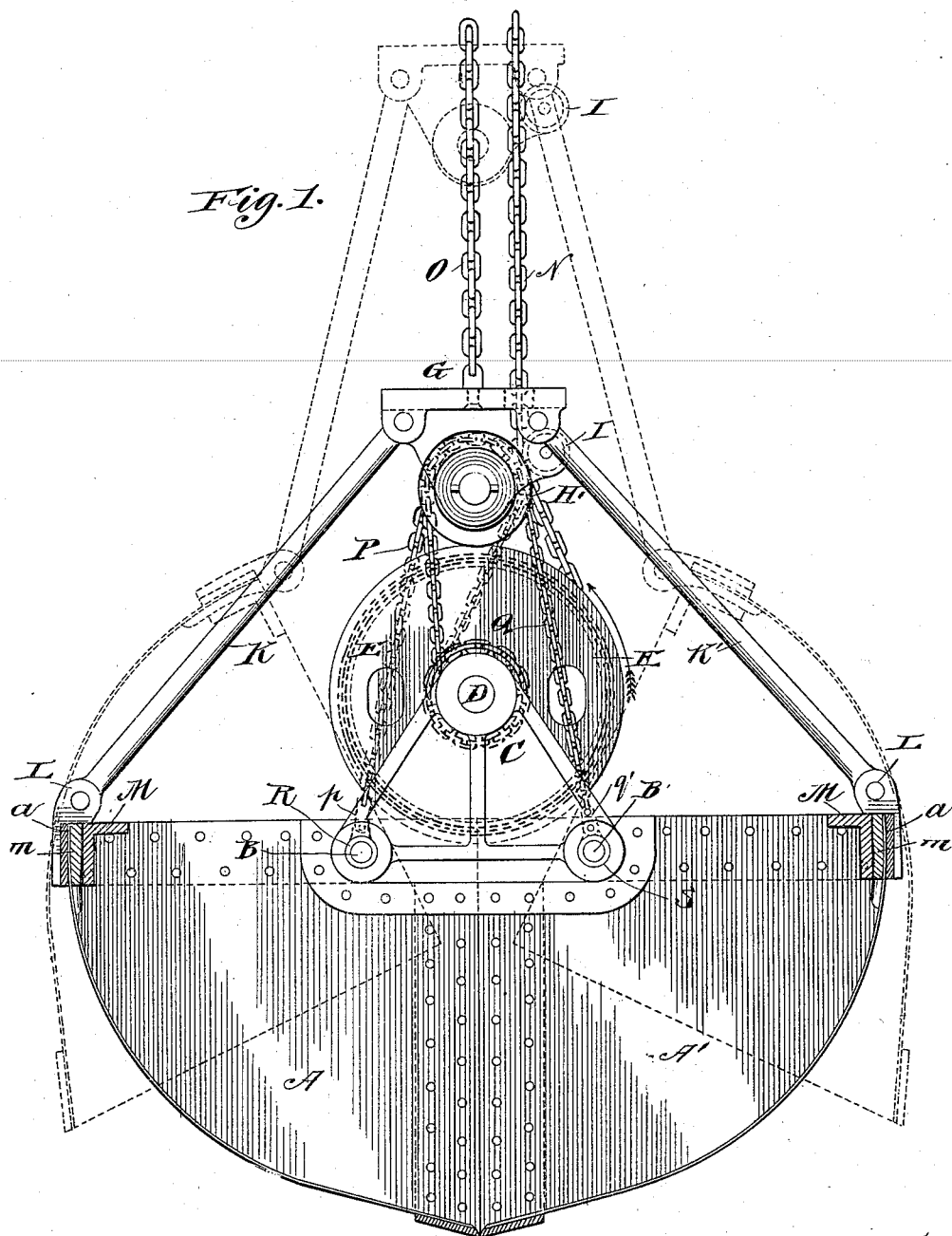
(No Model.)

3 Sheets—Sheet 1.

C. H. NOTTER.
HOISTING BUCKET.

No. 553,256.

Patented Jan. 21, 1896.



Witnesses.

D. Mann,
Frederick Goodman

Inventor,

Charles H. Notter
By *Offield, Fowler & Luthicrum*
Atty's.

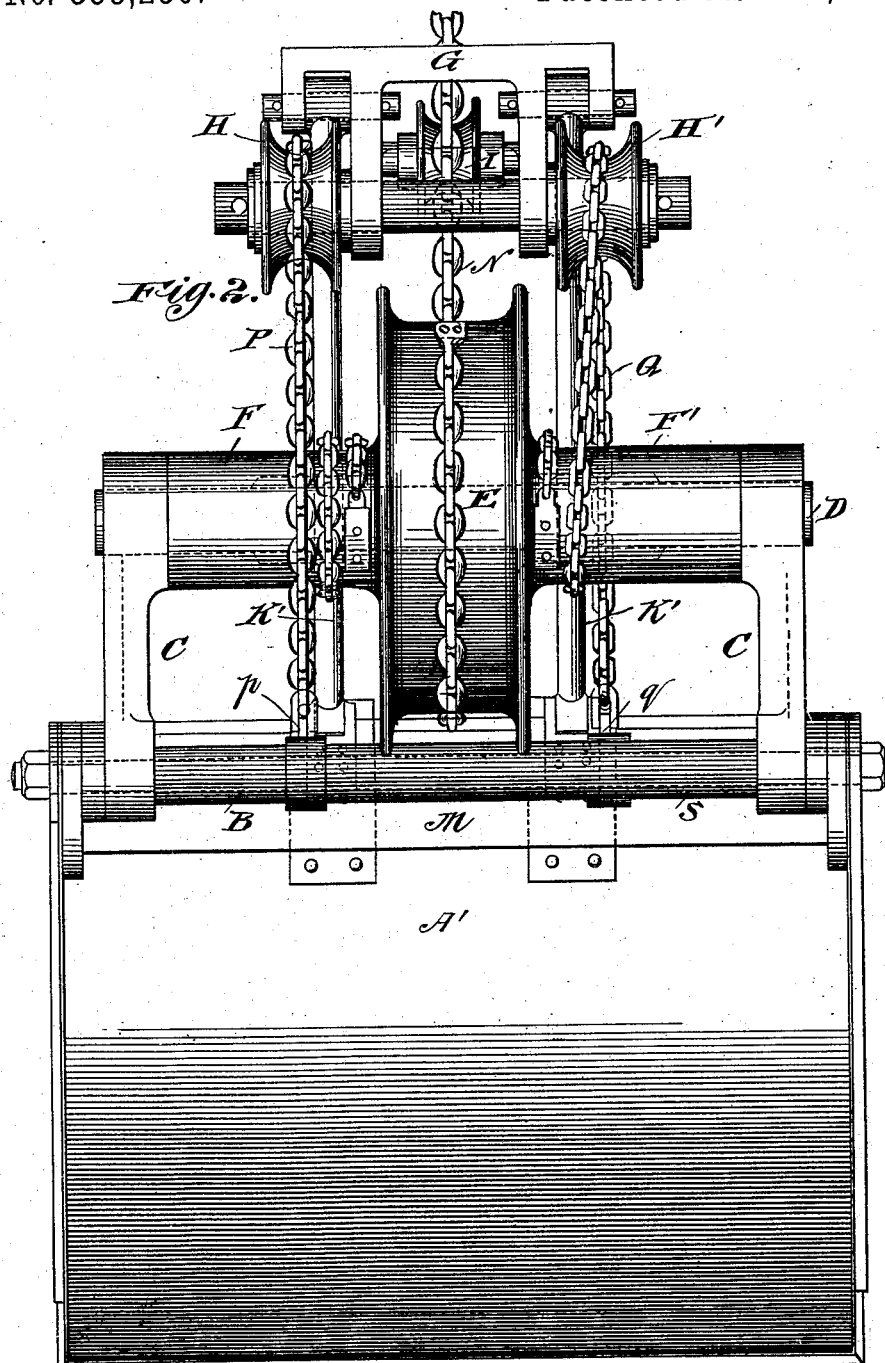
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Patented Jan. 21, 1896.



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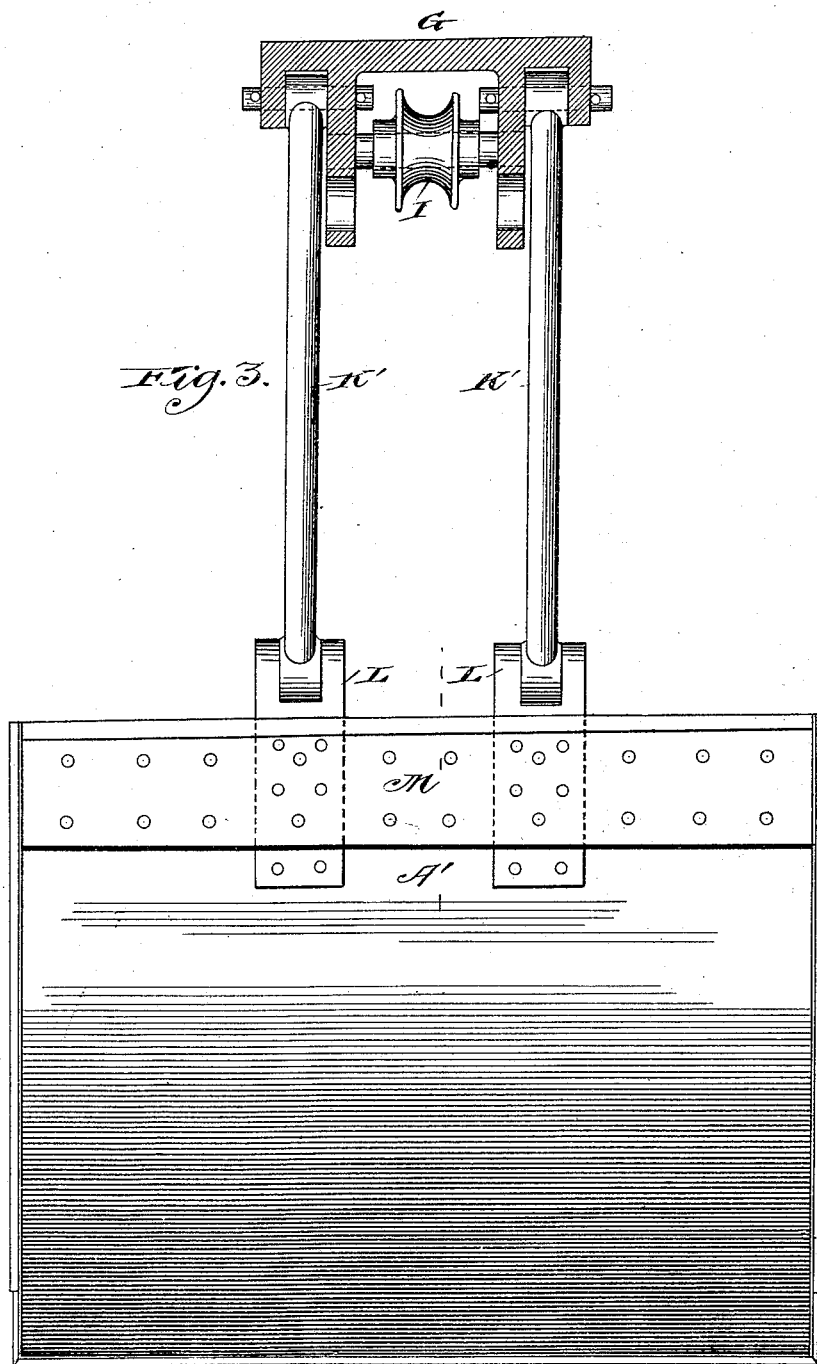
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HOISTING BUCKET.

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UNITED STATES PATENT OFFICE.

CHARLES H. NOTTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE W. S. BOGLE COMPANY, OF SAME PLACE.

HOISTING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 553,256, dated January 21, 1896.

Application filed August 24, 1894. Serial No. 521,196. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. NOTTER, of Chicago, Illinois, have invented certain new and useful Improvements in Hoisting-Buckets, of which the following is a specification.

This invention relates to that class of hoisting-buckets which are usually designated as "clam-shells," in which the bucket is divided centrally and the quadrant-shaped sides or sections thereof are pivoted and provided with means for swinging them on their pivots or close and open them in loading and unloading.

The object of this invention is to provide a bucket which shall be simple in construction and operation, strong, and in which the operating mechanism for opening and closing is entirely outside of the bucket itself, whereby its holding capacity is increased.

In the accompanying drawings, Figure 1 is an end elevation, sectional through the bucket-sections and showing a secondary position by dotted lines. Fig. 2 is a side elevation with one of the bucket-sections omitted, and Fig. 3 is an elevation showing the bucket-sections and arms in elevation and the head-block in section.

In the drawings, A A' show the bucket-sections, which are pivoted at some distance outwardly from their upper inner corners upon the shafts B B', the latter being mounted in bearings at opposite corners of the base of triangular frames C, arranged parallel to the ends of the bucket-sections. These frames are provided at their upper ends with bearings for a shaft D, on which is mounted the drum E, having the extended hubs F F', which abut at their outer ends against the frames C.

G represents a head-block in which is mounted the sheaves H H' and an intermediate sheave I. The sections A A' are pivotally connected with this head-block by the arms or levers K K', two being employed on each side and the lower ends of these levers being connected to the sections by the shackles L, which are bifurcated and embrace the rims a of the sections.

In order to stiffen the sections of the bucket at their upper edges, I may employ the angle-

bars M, which extend along the inner margins of the bucket-sections over the inner members of the shackles, the space between the shanks of said shackles being filled in, as at m.

The hoisting-tackle comprises the main cable or chain N, which is carried down through a suitable aperture in the head-block over the sheave I and has its end made fast to the drum E. A second cable O has one end made fast to the head-block and is carried thence to the hoisting-drum.

P Q represent chains or cables by means of which the sections of the bucket are closed. The cables are made fast to lugs p q on sleeves R S on the shafts B B', and are thence passed, but in opposite directions, around the sheaves H H', respectively, and are secured to the hubs F F' on the same side and on the opposite side of the axial center from the point of securement of the main cable N to the drum E.

The operation of the bucket may be briefly stated as follows: It being understood that the cables N and O are conducted over suitable sheaves suspended from a mast to hoisting-drums, the bucket is lowered in the open condition (shown by the dotted lines in Fig. 1) and with the main cable N wound upon drum E, the chains or cables P Q being slack or unwound from the hubs F F'. When the bucket in the open position reaches the material to be loaded, the cable N is drawn taut, which turns the drum in the direction shown by the arrow in Fig. 1, thus unwinding the bight of the cable N therefrom and winding the cables P Q about the hubs F F', thereby drawing the head-block toward the drum-shaft D and through the arms K K', forcing the sections of the bucket into the closed position. The bucket being thus closed and loaded the hoisting may be accomplished by the winding of both cables N and O, and when it is elevated sufficiently the cable N is slackened, and the cable O remaining taut the weight of the material and the bucket will cause the sections to open, thus unwinding the cables P Q from the hubs F F' and winding the slack of the cable N about the drum E.

The triangular frame which furnishes the bearing for the shaft of the drum and also for the pivot-shafts of the bucket-sections

renders the construction exceedingly strong, the bearing being located at the angles of the frame and the pivotal axes being separated, but arranged parallel to each other. It will be
 5 observed also that the arms extend straight from the head-block to their connection with the sections instead of being diverged. The pull and thrust on the sections through the arms are therefore in straight lines instead of
 10 oblique. The action is thus more direct and there is less tendency to buckle or bulge the sides of the sections than if the arms were connected at the corners thereof. The arrangement of the hoisting-tackle gives a pow-
 15 erful leverage in the opening and closing of the bucket-sections.

It will be seen that one end of each of the operating-cables is made fast to and winds with the hub of the drum, and that said ca-
 20 bles, after being passed over the sheaves which are carried by the head-block, are made fast to the frames. The weight of the bucket and its load, therefore, causes the ready opening of the sections in unloading, and in load-
 25 ing the cable, working on the large drum and winding the other cables on the hubs, draws on the head-block with great power, which is transmitted to the sections through the arms.

I have found in actual use that a bucket
 30 constructed in this form has a high efficiency and that the sections will bury themselves in

hard coal of large sizes—a most difficult material to handle.

It will also be observed that in operation the bucket-sections are closed before the lift-
 35 ing of the bucket bodily begins, and, further, that the pivots of the bucket-sections are separated and that the vertical adjoining edges of the sections when closed are considerably inside of the vertical planes of their
 40 pivots.

I claim—

In a hoisting bucket, the combination with a bucket frame, of two bucket sections pivoted at intermediate points of their upper
 45 margins to said frame, a head block, arms pivotally connecting the head block to the sides of the bucketsections, a drum journaled on the bucket frame, a hoisting cable having an end made fast to the drum and adapted
 50 to be wound thereon, and closing cables having their ends made fast to the hubs of the drum and adapted to wind thereon, sheaves carried by the head block and over which the closing cables are passed and the opposite
 55 ends of the said cables being secured to the bucket frame, substantially as described.

CHARLES H. NOTTER.

Witnesses:

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