

(No Model.)

M. DELORY.
HOISTING BUCKET.

No. 369,842.

Patented Sept. 13, 1887.

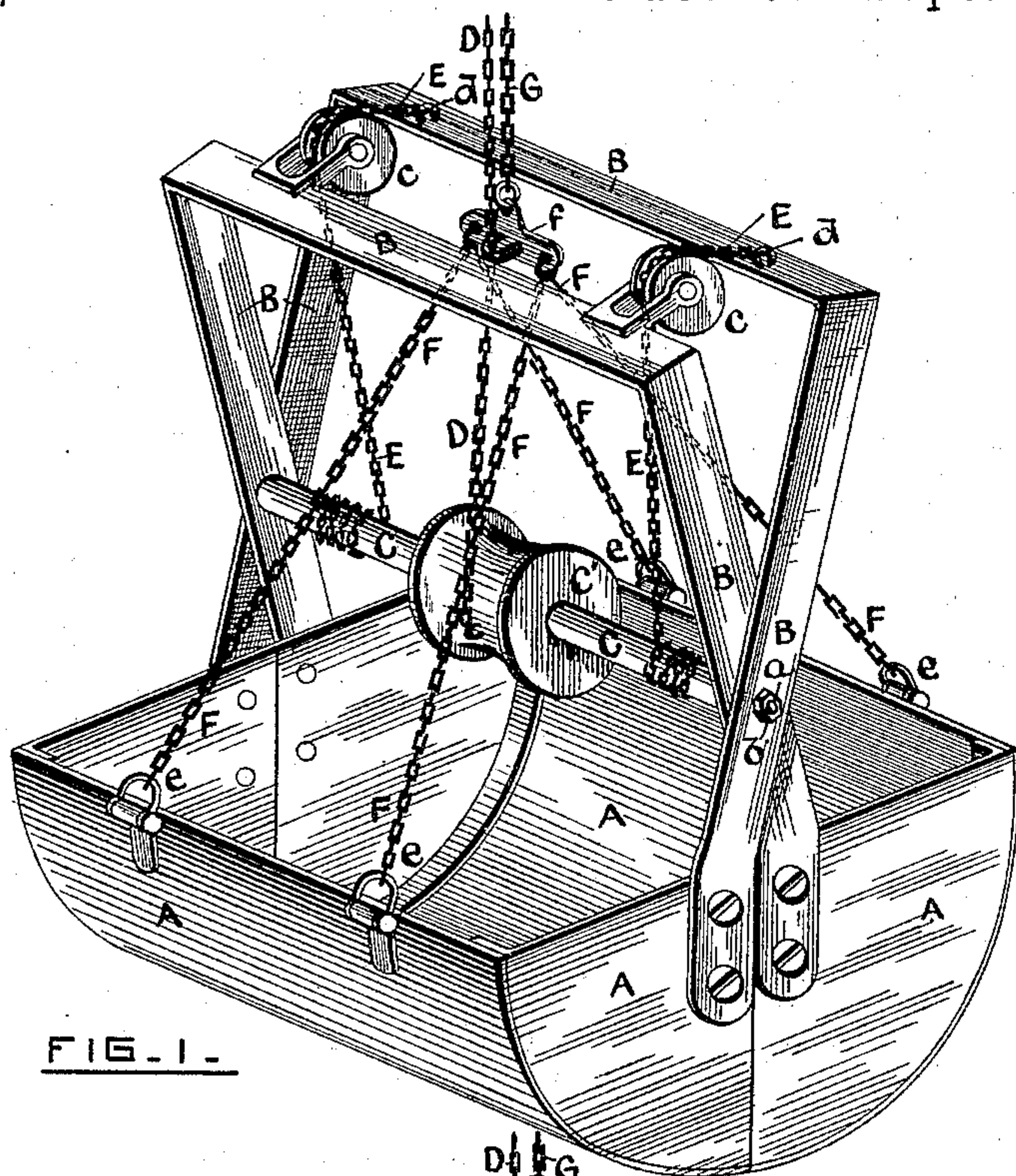


FIG. 1.

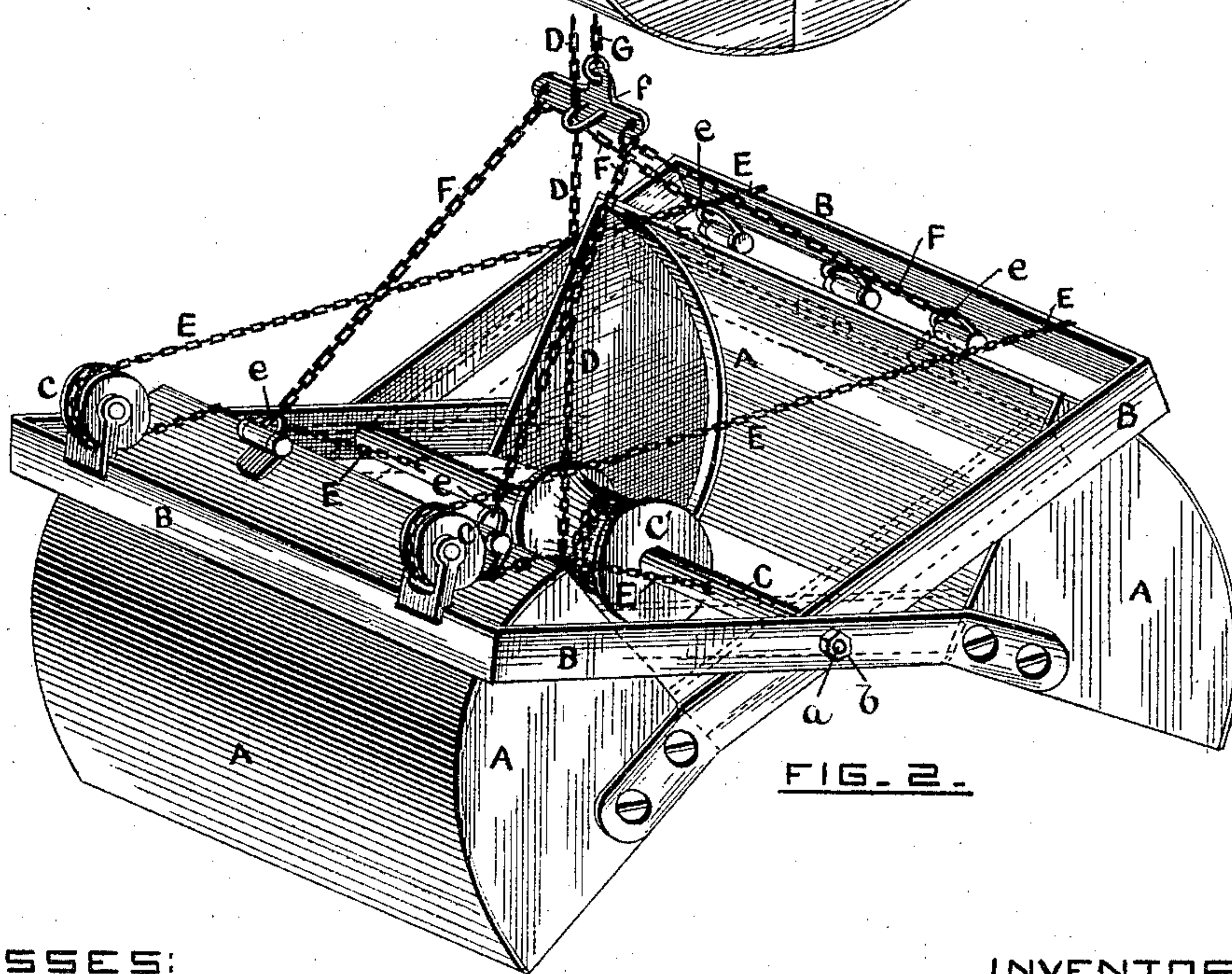


FIG. 2.

WITNESSES:

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MICHAEL DELORY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
WILLIAM W. WHITE, OF SAME PLACE.

HOISTING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 369,842, dated September 13, 1887.

Application filed November 20, 1886. Serial No. 219,440. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL DELORY, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Hoisting-Buckets; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

My invention relates to that class of hoisting-buckets which are composed of two parts or sections pivoted or hinged together, and which are provided with levers which cross each other scissor-fashion; and the object of the invention is to provide means for operating the parts of the bucket so that the bucket may be readily opened and closed under all circumstances, and may be adapted to operate upon coarse and heavy material—such as large size coal—which has heretofore been difficult to handle with buckets of this character.

The improved bucket hereinafter described is especially adapted to operate upon coarse and heavy material, and to that end the arrangement and organization of the parts are such as to obtain the necessary leverage, and also to secure the complete closing of the bucket before any lifting takes place.

Referring to the drawings, Figure 1 is a view in perspective of my improved bucket, showing the parts in closed position; and Fig. 2 is a view, also in perspective, showing the bucket open.

A A are the two halves or sections of the bucket. To these sections are attached, respectively, the bail-like levers B B, which levers cross each other scissor-fashion and are pivoted together at their point of crossing by means of the rod or bolt *a*, which runs the entire width of the bucket and connects the two parts of the bucket, with their attached levers, together, at the same time forming the pivot about which the parts of the bucket swing in opening and closing. This rod or bolt may be held in place by a head at one end and a nut, as at *b*, at the other. Upon this rod there is loosely mounted the windlass-shaft C, carrying the drum C', to which drum is attached one end of the chain D, the other end of said

chain communicating with some convenient source of power. To the windlass-shaft are attached the chains E—one on each side of the windlass-drum. One end of each of these chains E is attached directly to the windlass-shaft, and the other end is passed around the pulley *c*, which is mounted upon the cross-bar of one of the levers B, and is then secured, as at *d*, to the cross-bar of the other lever B, as shown in the drawings. For opening the bucket there are secured to each of the sections of the bucket, preferably at the top edge of the bucket proper, as at *e*, the chains F, which chains converge and are united to the single chain G.

In the construction shown in the drawings the chains F are united together and to the chain G by means of a connecting-link, *f*; but any other means of uniting said chains may of course be employed. In the drawings, also, two chains F are shown attached to each section of the bucket. If desired, however, only one such chain need be used.

As represented in full lines in the drawings, the levers B are shown of such a length as to extend outside of and beyond the walls of the bucket proper when the bucket is wide open, as shown in Fig. 2. If desired, however, these levers may be made shorter, as shown in dotted lines in the drawings, and so as to work inside of the bucket. This latter construction will be attended with the advantage that the bucket can be thereby opened more widely, as will be apparent, and thus be enabled to cover a larger area when open, and consequently to be dragged over a larger space in closing. If desired, also, the windlass-shaft may be made to serve as the pivot for the levers B, instead of employing the pivot-rod *a* with the windlass-shaft loosely mounted thereon; but such modified arrangement is not so good as that shown and described, for the reason that the friction and the consequent wear of the parts will be unduly great.

It will be understood that the chain D will be unwound from the windlass-drum when the bucket is closed, as shown in Fig. 1, while the chains E will be wound upon the windlass-shaft, and that when the bucket is open, as in Fig. 2, the chain D is wound upon the wind-

lass-drum and the chains E are unwound from the windlass-shaft.

The operation of the bucket is as follows: The bucket in its open position, as shown in Fig. 2, is lowered into the material to be hoisted, into which it embeds itself by its own weight. Power is then applied to the chain D, which causes the windlass drum and shaft to be revolved and the chains E to be wound up on the windlass-shaft, the chain D unwinding from the windlass-drum. The winding up of the chains E upon the windlass-shaft causes a pull to be exerted upon the cross-bars of the levers B, and as the chains are wound up the ends of the levers are pulled toward each other, and the two parts of the bucket consequently closed. During this operation it is better that the chain G should be slack, so as not to interfere with the proper closing of the bucket. When the bucket has been completely closed by the pull of the chain D, the revolution of the windlass-shaft, and the pull of the chains E upon the levers B, power is then applied to the chain G, as well as the chain D, and the bucket is hoisted by the two chains working together to the position where its contents are to be deposited. When the bucket has reached the proper position, the chain D is slackened. This throws the entire weight of the bucket and its load onto the chain G, which causes the two parts of the bucket to separate and the contents to be discharged. The bucket is then lowered by both the chains D and G to secure another load, when the operation above described will be repeated.

It will be observed that by this combination of a windlass drum and shaft with the scissor-levers secured to the sections of the bucket a powerful leverage is obtained, thereby enabling the jaws of the bucket to overcome great resistance. Moreover, it will be seen that the pull upon the ends of the levers during the operation of closing the bucket is not upward, as heretofore, but is, instead, downward, by reason of the fact that the windlass-shaft, by the rotation of which this pull is exerted, is situated in a plane below the plane of the ends of the levers. As a result of this arrangement and this downward pull upon the levers, there is no tendency to lift the bucket while it is being closed; but the two parts or sections of the bucket must be brought completely together before any lifting can take place.

What I claim as my invention is—

The improved hoisting-bucket herein described, composed of two parts or sections, an operating-lever secured to each section of the bucket, said levers crossing each other and pivoted in the line of their intersection, a windlass shaft and drum located in the line of said pivot, and operating-chains arranged to work the sections of the bucket, substantially as described.

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Witnesses:

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