J. McSPIRIT.

DREDGE-BUCKET.

No. 193,172. Patented July 17, 1877

Fig: 3.

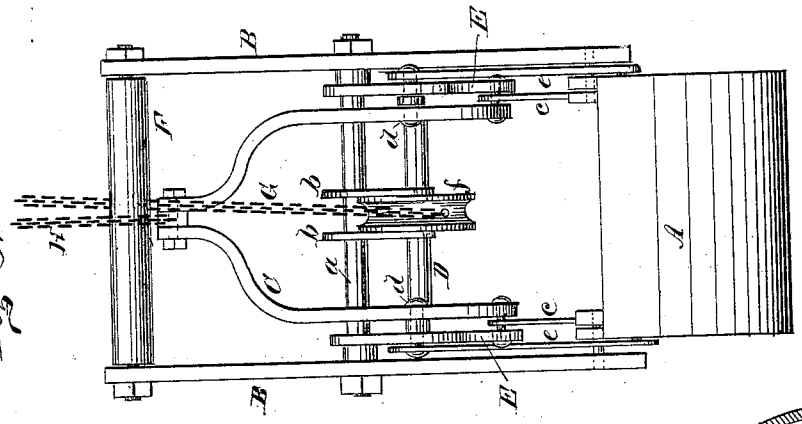


Fig: 2.

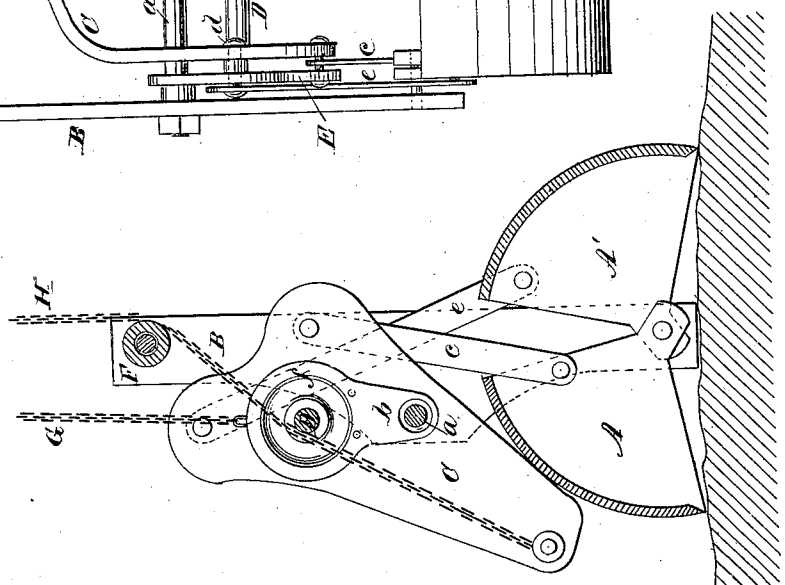
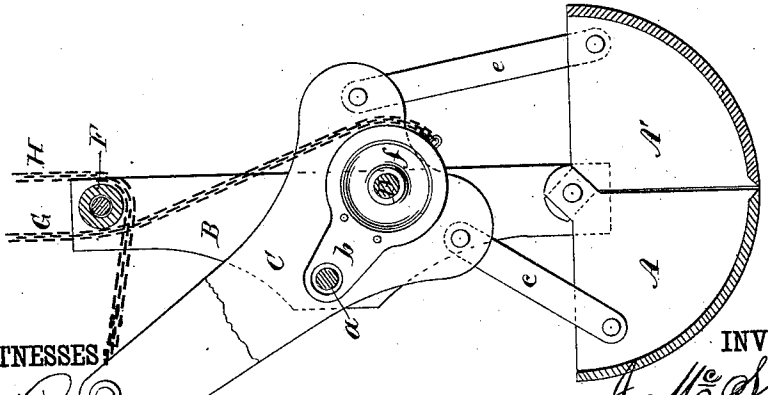


Fig: 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES McSPIRIT, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN DREDGE-BUCKETS.

Specification forming part of Letters Patent No. **193,172**, dated July 17, 1877; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, JAMES McSPIRIT, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Operating Dredge Buckets and Grapples, of which the following is a specification:

Figure 1 is a side elevation in section of my improved apparatus, showing the dredge-buckets closed. Fig. 2 is a similar view, representing the buckets open. Fig. 3 is a side elevation.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a device for operating dredge buckets and grapples by means of levers and connecting-rods, and to dispense with the usual windlass and other objectionable devices.

In the drawings, A A′ are halves of the dredge-buckets, of the usual form, which are hinged to the frame B and to each other, and C is a forked lever which turns on the cross-bar *a* of the frame B, and is provided with the cross-bar D, upon which is placed a sheave, *f*, which is prevented from turning by arms *b*, that are attached to it and to the bar *a*.

The branches of the lever C are nearly triangular in form, and to them connecting-rods *c* are pivoted, which are also pivoted to the sides of the part A of the dredge-bucket.

To each of the branches of the lever C a plate, E, is attached, by means of the bolt *d*, and is separated from the lever by a washer having a thickness a little greater than that of the connecting-rods *c*.

This plate is further secured by the bolt that forms the pivot of the rod *c*, and it swings on the bar *a* with the lever C. A connecting-rod, *e*, is pivoted to the lever C, and also to the part A′ of the bucket.

This arrangement of the lever and connecting-rod forms a pair of toggle-joints for each half of the bucket, which are capable of forcing them together against great resistance.

A roller, F, is journaled in the upper part of the frame for guiding the chains that operate the buckets.

A chain, G, is attached to the sheave *f*, and winds partly around it when the buckets are closed, and extends upward to the crane that supports the buckets, and a chain, H, is attached to the upper end of the lever C, and passes under the roller F and upward to the crane before mentioned.

The buckets are closed by drawing the chain H, and are opened by drawing the chain G; and the chain H is mainly used in raising the buckets, while the chain G is employed to lower them.

It is obvious that the levers and devices described in connection with dredge-buckets may be employed with equal advantage to operate grapples.

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

The combination of pivoted dredge-bucket halves A A′, operating chains G H, rods *c e*, plates E, and lever C, as shown and described, for the purpose specified.

JAMES McSPIRIT.

Witnesses:
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