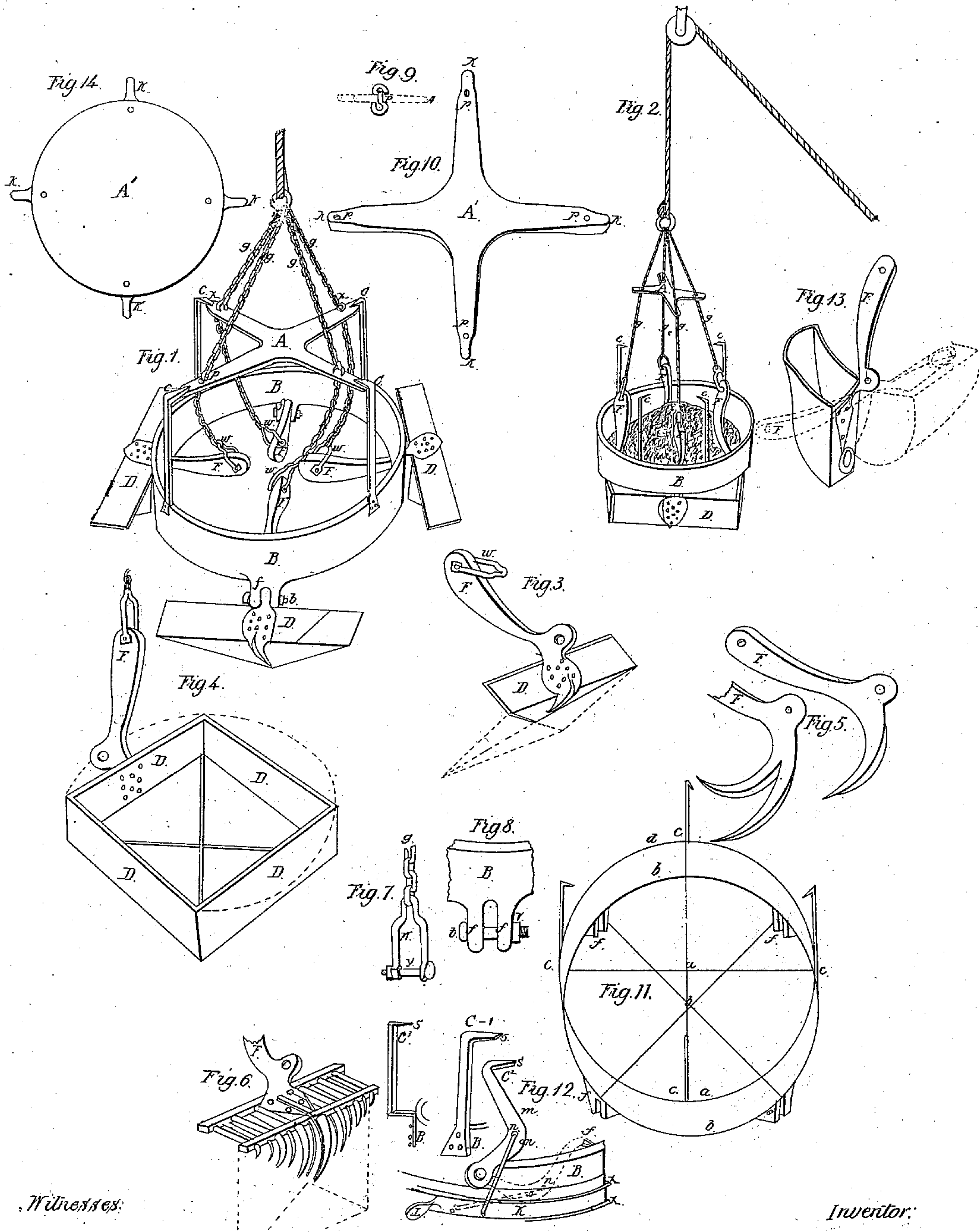


A. Stoner,

Dredger,

N^o 16,886.

Patented Mar. 21, 1857.



Witnesses:

Jacob Stauffer
C. M. Martin

Inventor:

Augustus Stoner

UNITED STATES PATENT OFFICE.

AUGUSTUS STONER, OF MOUNT JOY, PENNSYLVANIA.

GRAPPLING AND DREDGING MACHINE.

Specification of Letters Patent No. 16,886, dated March 24, 1857.

To all whom it may concern:

Be it known that I, AUGUSTUS STONER, of the borough of Mount Joy and county of Lancaster and State of Pennsylvania, have
5 invented a new and useful Machine for Grappling and Dredging; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being
10 had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view, when set with the shovels spread ready for scooping; Fig. 2, the same having scooped, and ready
15 or when being hoisted. Fig. 3, is a single miter shovel; Fig. 4, four of such shovels forming a close box; Fig. 5, a single or double hook, which may be used to replace the shovels Figs. 3, 4; Fig. 6, a miter oyster-
20 rake, which like the bucket Fig. 13, can be adjusted, by means of the clevis, Fig. 7, *w*, attached to each of the chains *g*, and the headed pin *t*, and screw and nut *v*, in the fulcrum bearers *f*, *f*, of the main ring B,
25 Fig. 8. Fig. 9, is the connecting link of the chains *g*, passing through and supporting the arms A, at *p*. Fig. 10, the cross piece A, which supports the machine, as shown in Fig. 1. Fig. 11, is a plan of the upper edge
30 *d*, *d*, of the ring B, with the uprights C; *b*, *b*, the lower edge with the fulcrum bearers *f*, *f*, placed intermediate to the uprights. Fig. 12, three different uprights that may be used; C', is firmly attached to the ring B,
35 having a bent upper projecting point, *s*, adapted to the arms of the center piece A' or A² bent at right angles; C², is an elbowed upright moving on the pin *i*, with a rod hinged at *n*, passing to a sliding ring K, attached thereto at *o*. The ring K, is mov-
40 able between two shoulders *x*, on the main ring B, so that when the upward pressure of the cross piece A, by the weight of the apparatus, which it sustains, is removed the
45 elbowed uprights fall and shift the ring K, in the direction of the dotted lines. To this ring K, a handle L is affixed for setting up the uprights C². C³, is another form, also
50 attached to the ring, bent at right angles at the base and top *s*. Either of those uprights may be used, C³ to admit the cross piece A, to lodge on the ring, C² to obviate the danger of the projecting point or nozzle S, to intercept the arms of the cross piece A, on
55 operating the levers F, of the hooks or shovels; C³ is substituted when the cross

piece A, Fig. 14, is used, which cross or center piece A², is dished and lodges on the ring, so that the chains above cannot be-
60 come entangled among the levers, by unnecessarily continuing to slacken the main rope after the machine is lodged.

To enable others skilled in the art to make and use my invention I will proceed to de-
65 scribe its construction and operation.

To a ring or other figure, of cast or wrought iron, I attach three four or more fulcrum bearers, *f*; at base, over or interme-
70 diate between them on the top I attach by rivet or pin a corresponding number of up- rights C', C², or C³ as may be preferred. In the fulcrum bearers *f*, I suspend a miter shovel, hook or bucket by means of the pin *t*, nut and screw *v*, Fig. 8. To each of these
75 hooks, shovels or buckets I affix a lever F, of sufficient weight at the inside end to ele- vate the hook or shovel, &c., on the fulcrum pin *t*, of sufficient length to meet in the cen- ter, each lever, having a hole for the clevis pin *y*, Fig. 7, and is part thereof, of either
80 hook or shovel. To four or more chains united to a single main chain or cable, in a ring or otherwise, I affix the connecting links *x*, Fig. 9, and continue them on, to the lower end of each chain *g*. I affix a clevis,
85 Fig. 7, for the reception of the levers F; said links are at equal distance and support the cross piece A', Fig. 10, or A², Fig. 14, by being passed through a hole for their re- ception, at *p*, thus Fig. 10 or 14 A' or A² is
90 suspended in the chains or ropes *g*.

To operate the machine, the ends K, of the cross or center piece A' or A² are down under the nozzles S, or projections of the uprights C', C² or C³, Fig. 12;
95 then by any ordinary tackle, raising the machine; its entire weight is borne by the chains *g*, and cross piece A and the levers drop, by their own weight, spread- ing out the hooks or shovels attached;
100 thus set it can be lowered to any depth and so soon as the machine lodges, the pressure is removed from the cross piece A and points *s*, (which sustained the machine while in the air or water,) now drops and lodges on
105 the ring. Upon again hoisting the machine the cross piece, either by coming with the arms K, over the levers F, or the drop, kneed upright C² being down, with their
110 points *s*, resting on the ring, so that in either case, the chains *g*, now operate on their re- spective levers, causing the hooks, shovels

or buckets to move inward to a common center on their respective fulcrum *f*, and firmly grasping and holding any rocks, stones, sand, mud or the like that may come in its way. The weight of the machine and its contents is now sustained by the levers *F*, and can be so hoisted, and with a crane or otherwise lowered to where the contents are to be lodged. All that is requisite to unload, is to let the box or hooks lodge in the given place, again affixing the cross piece to the supporters of the ring and its apparatus, and hoist the machine; the hooks or buckets will readily now relinquish their holds, and deposit their load, and the levers drop and extend the hooks or shovels ready set for another diving operation, as this brings the apparatus again to its former position.

For all ordinary purposes the machine in its simplest form, as exhibited in Fig. 1, will answer, so that the extra ring and kneed or elbowed supporters *C*², Fig. 12, can be dispensed with, or the dished ring *A*², Fig.

14, with its support *C*³. They may however be substituted, to guard against the possibility of entanglement of the chains and levers or arms of the cross piece with the nozzles or points of the supporters.

I do not claim the clevis, levers, hooks, &c., separately.

What I claim and desire to secure by Letters Patent, as my invention, is—

The combination of the machine, the supporting and lever shifting cross piece *A*, the mitered shovels *D*, when combined in the manner as herein set forth, the ring *B* or its equivalent, to sustain the apparatus, and, chains so linked and constructed, to operate all the levers simultaneously and sustaining the cross piece *A* aforesaid, said combination being substantially in the manner, and for the purposes, as herein set forth.

AUGUSTUS STONER.

Witnesses:

JACOB STAUFFER,
C. M. MARTIN.