

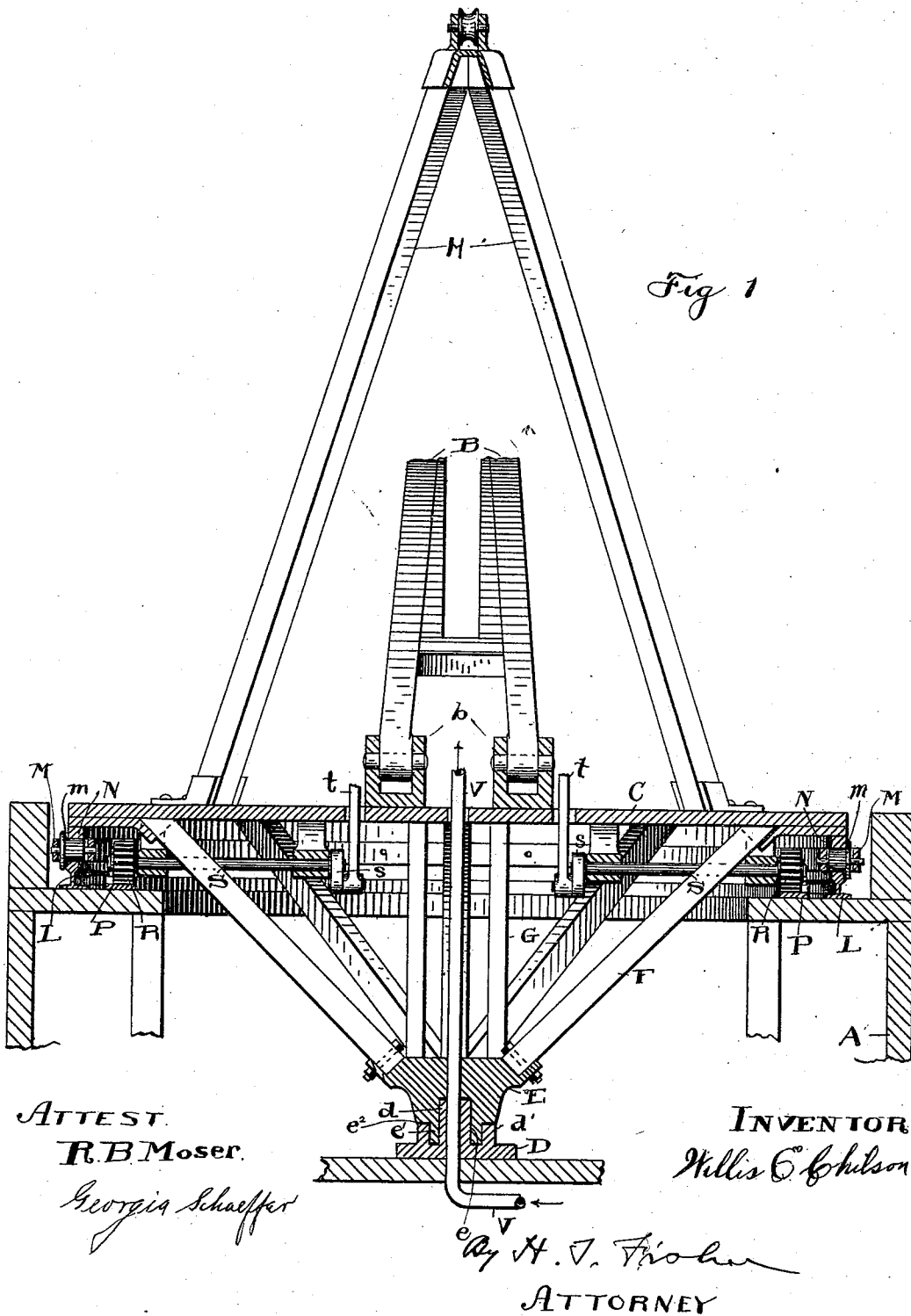
(No Model.)

2 Sheets—Sheet 1.

W. E. CHILSON.
DREDGING APPARATUS.

No. 501,492.

Patented July 18, 1893.



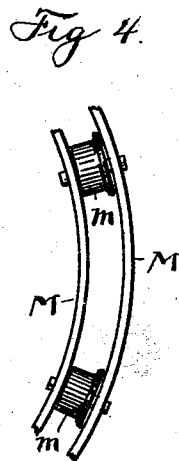
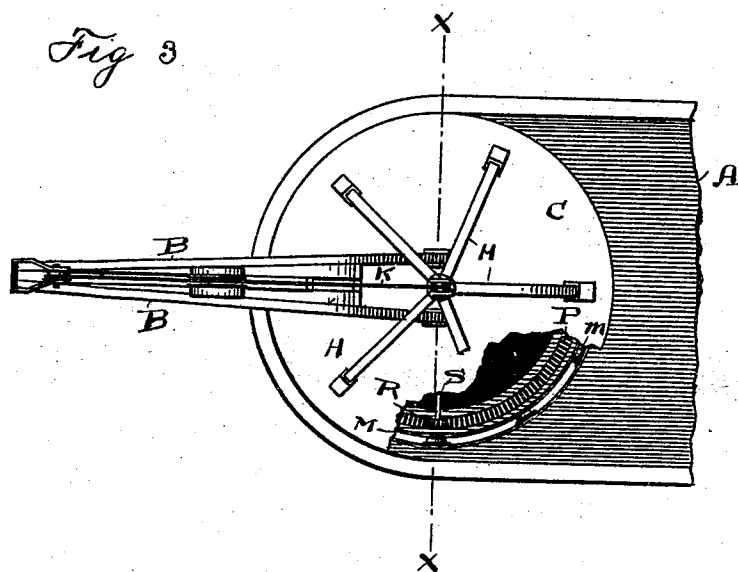
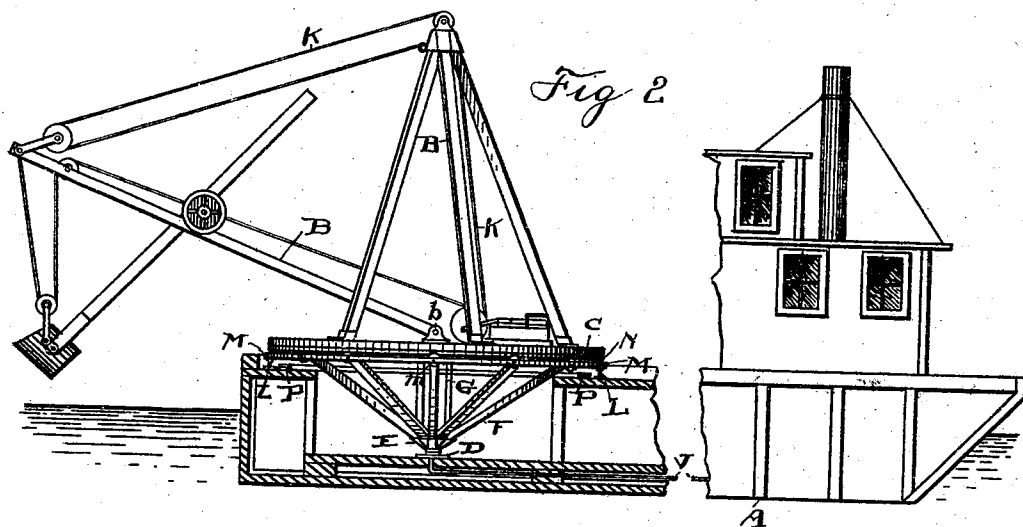
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ATTEST.

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WILLIS E. CHILSON, OF LORAIN, OHIO.

DREDGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 501,492, dated July 18, 1893.

Application filed January 9, 1893. Serial No. 457,750. (No model.)

To all whom it may concern:

Be it known that I, WILLIS E. CHILSON, a citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Dredging Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to dredging apparatus, and the invention consists in the construction, combination and arrangement of parts substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical central sectional elevation of the apparatus taken substantially on line x, x , Fig. 3, and looking in the direction of the boom. Fig. 2 is a side elevation of the said apparatus reduced in size from what is shown in Fig. 1, and showing a vertical section of the boat which carries the said apparatus and a portion of the boat at the front in full lines. Fig. 3 is a plan view of the dredging apparatus with a portion taken away at one side to reveal the mechanism beneath. Fig. 4 shows a section of the circular wheel or sheave from which it is adapted to travel on a circular track and support the platform about its outer edge.

A represents the dredging boat, only sufficient thereof being shown here to illustrate the location of the apparatus in the boat, and to show the relation of the parts to one another and to the boat.

B is the boom, consisting, in this instance, of two bars converging from their base to their top and carrying the usual mechanism, pulleys, cables or ropes, and the like, to operate the scoop. As here shown the said boom is pivoted to swing only in vertical lines, and the pivot point occurs at the center or what may be termed a turn table C. It will be seen in Fig. 1 that the beams of the boom are each supported separately in a suitable bearing b , and that in this bearing there can be no swinging of the boom laterally, and that its only movement is up and down within vertical lines as before described. The turn table C has a double support. Primarily it rests upon the central bearing D. This bearing is fixed

in the bottom of the boat and has a central cylindrical tubular stud d , and an annular vertical flange d' outside of said stud and of about half the elevation thereof, and leaving an open space or channel between the said stud and flange. A heavy bearing block E is constructed to fit upon or in the bearing D, having a suitable annular recess e for the tubular stud or extension d , and an annular flange e' , and shoulders e^2 resting upon said flange. This head E furthermore is constructed for the attachment of the supporting braces F and G. The supporting braces F run at an angle of about forty-five degrees from the bearing block E to near the periphery of the turn table C, and are firmly and rigidly fixed at their ends to said parts. As many of these diagonal braces are used as may be required to give the requisite strength to the frame, and the standards or braces G are arranged vertically and are supported at their lower ends upon the said bearing E and at their upper ends are affixed to the turn table C. These vertical braces or supports take the downward pressure more especially that comes upon the base of the boom, while the laterally inclined braces F form a support to take the pressure that comes upon the outer portion of the turn table, more especially through the top frame, consisting of the high supports H. This top frame rests at its base upon the turn table C near the outer portion thereof, and there are as many of these upright converging posts H as may be needed to answer the purpose. In this instance I show five such posts, and there may be a greater or less number. The cable or rope K which supports the outer extremity of the boom passes over a sheave or sheaves at the top of this top frame, and there comes necessarily a great strain on this frame, and hence it must be made exceedingly firm and strong. Furthermore, owing to the height of this frame and the heavy outward pull there is upon it when the load is carried, it is necessary that the said frame should not only be wellspread at its base, but that it should have an exceedingly firm support at that point so as not to be tilted or even to be strained to any material extent in the mechanism forming its support. Hence, the construction I have already in large part described of a widely extending turn table C, forming the immediate

base for said upright frame, and the strong sub-braces F running down to the lower central bearing, and the construction of the said bearing itself, this latter construction being
 5 such that it is able to withstand not only the weight which comes directly down upon it, but to take any side thrusts or pressure that may come through the diagonal braces by reason of the tilting tendency produced by the
 10 load on the upright frame-work H.

Now, in order that the boom may be carried around to any desired position for work, I have so constructed the turn table and its associated parts that the said table with the
 15 boom may be rotated to any point desired, and as a means of rotation and support for the edge of the table, I have arranged a circular track L and placed thereon the wheel frame M, with suitable small wheels *m* at intervals thereon, as shown in Fig. 4, and adapted to travel on the said track L. Then there is a bearing rim N arranged around on the base of the turn table and resting upon the wheels *m*, and these wheels and the
 25 track and other parts thus constructed and arranged, with the bearing D, E, at the center, to take and support all the weight and pressure that comes upon said turn table. All danger of the table tilting is overcome by the construction shown, and this construction
 30 also is such as to make it comparatively easy to rotate the said turn table with all the weight thereon at any time and to any extent that may be desired. To effect this rotation, I have shown here a ring gear track P, inside
 35 the rail track L, and upon opposite sides of the turn table are pinions R supported upon independent shafts S and arranged to mesh with the said ring gear. These shafts S have
 40 cranks *s* and pitmen *t* connected therewith for operating the same. These pitmen or connecting rods *t* are driven by any suitable power, such as a steam engine or electric motor, or the like, through which power to turn
 45 the table is communicated at the will of the operator of the apparatus, and in any direction and to any extent he may find necessary. If I should use a steam engine to operate this

rotating mechanism and the hoisting mechanism as well, the steam would be taken
 50 through the pipe V, which is shown here as passing through the bearings D and E, and up through the center of the turn table to connect with the engine which would be located upon said turn table at any suitable place.
 55

It will be noticed by the foregoing construction that the boom may be swung around on a complete circle, and may be stopped at any point of the circle. This enables me to swing the boom around directly over the boat when
 60 moving from one point to another, and to house the boom and its attendant mechanism for the winter or when it is not in use. It will also be seen that I can work clear around from one side of the boat to the other wherever the sweep of the boom will reach, and that I can dip on one side of the boat and swing around and unload upon the other side.

Having thus described my invention, what I claim is—

1. In a dredging apparatus, a fixed bearing arranged on the bottom of the boat, a bearing-block resting on the bearing, a turn-table, vertical and inclined braces connecting respectively the center and the outer portions
 75 of the table with the said block, a rigid top frame and a boom supported on the table, and wheels supporting the outer edge of the table.

2. In a dredging apparatus, a fixed bearing arranged on the bottom of the boat and having a central cylindrical stud and an annular flange surrounding the stud, a bearing-block having a recess for the stud and an annular shoulder bearing upon the flange of the bearing, a turn-table, vertical and inclined braces
 85 connecting respectively the center and the outer portions of the table with the said block, and a rigid top frame and a boom supported on the table.

Witness my hand to the foregoing specification this 30th day of December, 1892.

W. E. CHILSON.

Witnesses:

GEORGIA SCHAEFFER,
 H. T. FISHER.