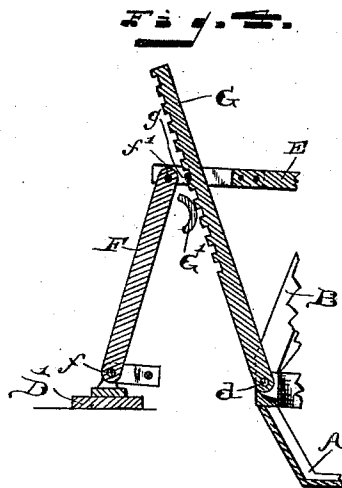
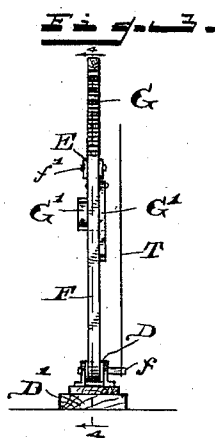
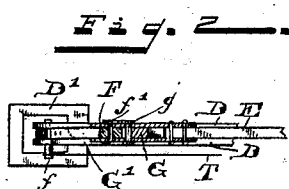
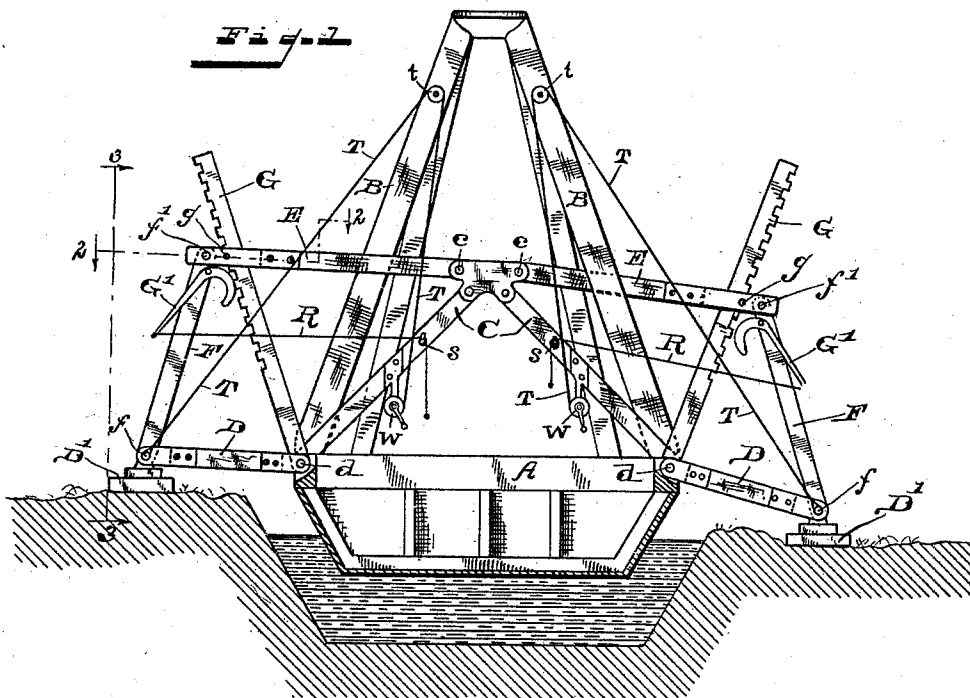


(No Model.)

F. J. SMITH.
BRACE FOR DREDGES.

No. 498,824.

Patented June 6, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK J. SMITH, OF SHELDON, ILLINOIS.

BRACE FOR DREDGES.

SPECIFICATION forming part of Letters Patent No. 498,824, dated June 6, 1893.

Application filed August 16, 1892. Serial No. 443,241. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. SMITH, a citizen of the United States, residing at Sheldon, in the county of Iroquois and State of Illinois, have invented certain new and useful Improvements in Braces for Dredges, of which the following is a specification.

My present invention relates to that class of devices by which dredges are steadied in operation, especially those used in work on canals.

Said invention will be first fully described and then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a transverse sectional view of a shallow canal, with a dredge boat therein provided with my invention; Fig. 2 a detail sectional view looking downwardly from the dotted line 2 2 in Fig. 1; Fig. 3 a fragmentary elevation, and Fig. 4 a detail section on the dotted line 4 4 in Fig. 3.

In said drawings the portions marked A represent the hull of an ordinary dredge boat; B an ordinary dredge-supporting frame thereon; C a centrally located "A-frame" carrying portions of my invention; D hinged beams or arms extending out from the sides of the boat, at the bottom of the A-frame; E other beams or arms extending out in a similar direction from the top of the A-frame; F links or connecting bars connecting the outer ends of said two beams, and G toothed adjusting and holding bars.

The boat A and its derrick or frame-work B are or may be of any ordinary or desired construction. The frame-work B carries the derrick for handling the shovel and other dredging mechanism, which, as it forms no part of my present invention, is not shown. The frame C is an ordinary A-shaped frame, mounted fixedly on the boat, the apex whereof is central above the boat. The arms D are mounted on pivots *d* firmly secured in bearings in the sides of the boat A, and which extend out far enough to overhang the banks of the canal, where they are armed with broad feet D' suitably pivoted thereto, which feet rest upon the banks when the device is in operation. The arms E are attached by means

of pivots *c* to the top of the A-frame C, and extend out above and substantially parallel with the arms D. The connecting bars F are secured by pivots *f* and *f'* to the arms D and E, respectively, and cause said arms to move together.

The adjusting and holding bars G are pivoted at or near the same point that the arms D are, to the side of the boat, and preferably upon the same pivots, *d*, therewith. They are provided with a series of notches, as shown, and heavy catch-pins or detents *g* which pass through the arms E serve to engage with said notches. Mounted upon some suitable part of the frame-work, preferably upon the connecting bars F, are levers G' by which the bars G may be thrown back out of engagement with the pins *g*. This is conveniently done by means of ropes R which are attached to the ends of said levers, and run in over sheaves on the frame C to near the center of the boat, where they can conveniently be reached. The ends of the levers G' which come in contact with the bars G are preferably broad curved surfaces, so that they shall not catch in the notches or teeth of said bars G. When the bars G are disconnected, the whole structure composed of the parts D, E and F can be raised or lowered. This is conveniently done by means of the ropes T attached to the bars D at or near the pivots *f*, and running thence to sheaves *t* near the top of the frame B, and thence down to windlasses W attached to a convenient portion of the frame.

The operation is as follows:—When the boat is set in position for dredging, the arms (which up to this time have been held up by means of the ropes T) are lowered until the feet thereon rest upon the surfaces of the adjoining banks. The bars G are then let forward until the appropriate notches engage with the pins *g*. The derrick, when the shovel or dipper is being dumped, of course swings to one side or the other, and would naturally tend to seriously tip or tilt the boat, but by my invention this is effectually prevented, the boat pulling downwardly on the bars G, which in turn push downwardly, through the connecting bars F, onto the feet D'. The side of the boat which would otherwise be depressed, is thus lifted with as much force by means of

the pull of the corresponding arm G as it is forced down by the weight thrown onto it by the operation described, and the boat is thus held in level position; which, as will be readily understood, is of great advantage.

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

1. The combination, with a dredging-boat, of a central frame-work, arms extending from the bottom and the top of said central frame-work out laterally from the boat, connecting bars connecting said arms at their outer ends, and adjustable holding bars also pivoted to the side of the boat near the foot of the frame-work, and thence extending up and engaging with suitable pins or detents at or near the point where the connecting bar connects with the upper arms, substantially as set forth.
2. The combination, with a dredging boat, of a central supporting frame-work, and a pivoted frame-work composed of the bars D, E, F and G pivoted together and serving to

adjustably support or steady the boat in position, substantially as set forth.

3. The combination, with an adjustable frame-work carrying a pin or detent *g*, of an adjustable sustaining bar, as G, provided with notches which engage with said pin or detent, and a lever G' pivoted to the frame-work and adapted to throw said bar out of engagement when desired, substantially as set forth.

4. The combination, with the pivoted frame-work D, E, F, of the rope T attached thereto, a sheave over which said rope passes, and a windlass for winding up said rope and elevating said pivoted frame-work, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 11th day of August, A. D. 1892.

FREDERICK J. SMITH. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.