(No Model.)

W. B. PLESS.

MAST FOR DREDGERS.

No. 505,176. Patented Sept. 19, 1893.

Fig. 1.

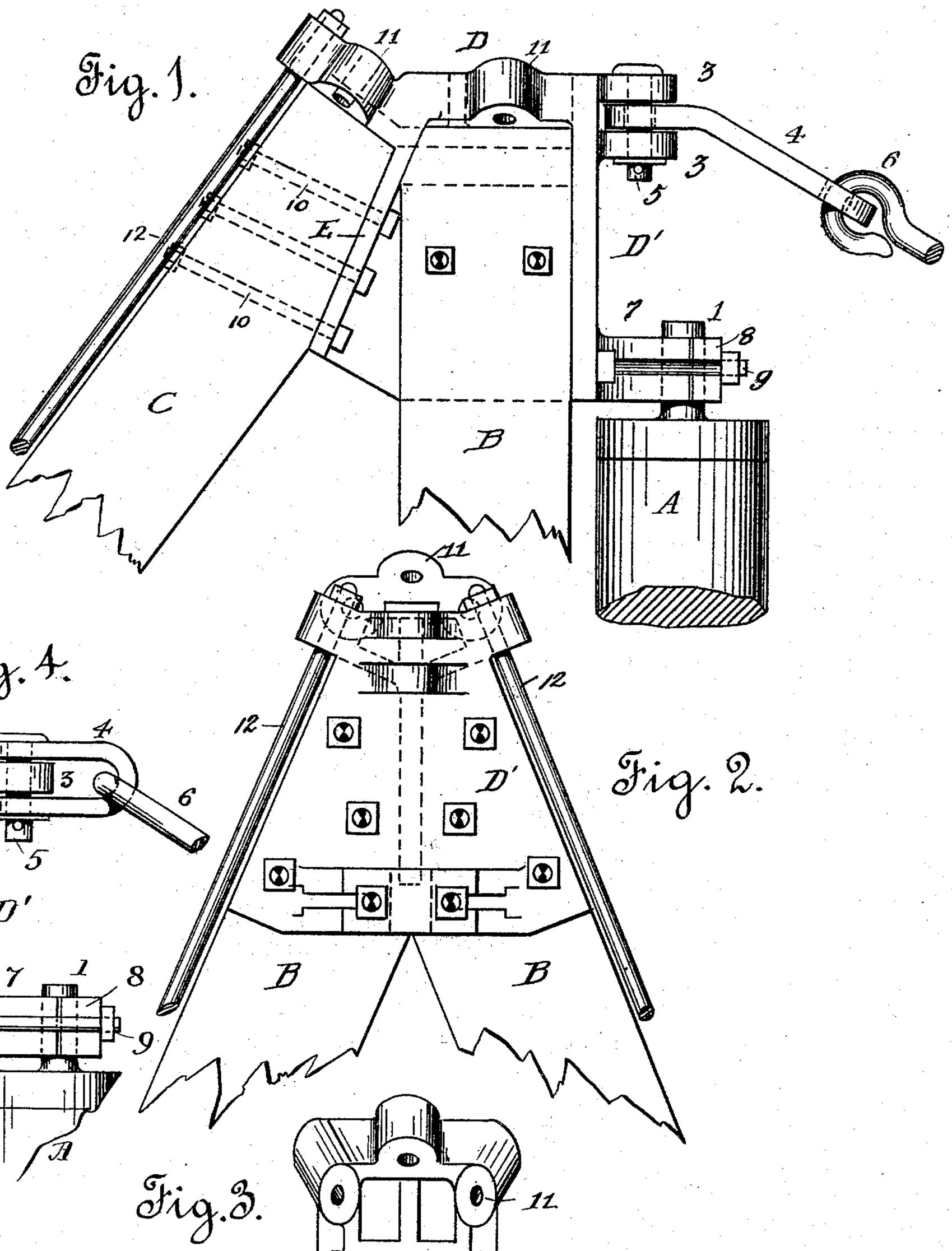
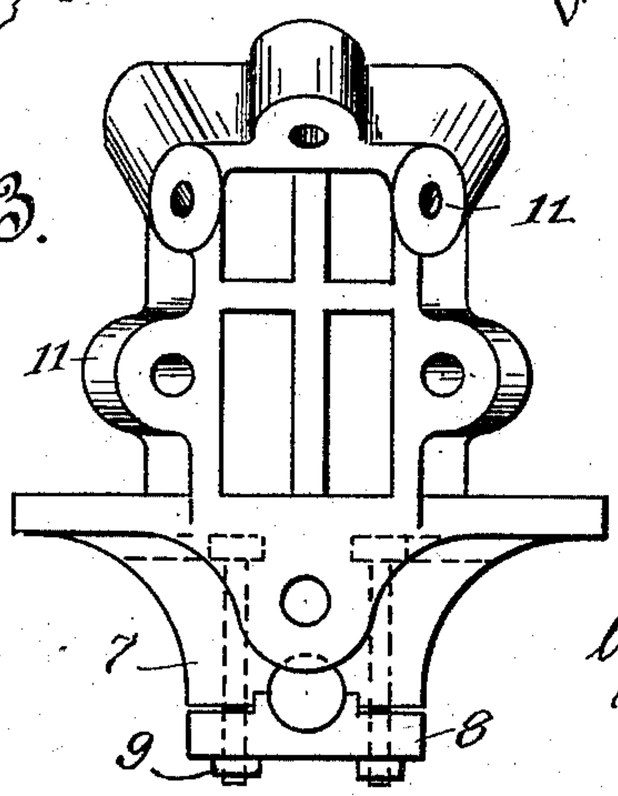


Fig. 4.

Fig. 2.

Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM B. PLESS, OF STOCKTON, CALIFORNIA, ASSIGNOR TO THE PLESS DREDGING AND RECLAMATION COMPANY, OF NEVADA.

MAST FOR DREDGERS.

SPECIFICATION forming part of Letters Patent No. 505,176, dated September 19, 1893.

Application filed June 9, 1893. Serial No. 477,060. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. PLESS, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Masts for Dredgers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to dredging machines, and particularly to that class of dredgers in which a swinging boom supports a bucket of the clam-shell type, from which suspension chains extend to winding machinery mounted on the hull, whereby the bucket can be lowered to the bottom, raised, and swung sidewise to deposit the excavated material.

My present improvements consist more especially, in an improved construction of those parts adjacent to the top of the dredger mast, namely the so-called "A frame" in which the upper end of the mast is swiveled, as well as of the devices for connecting this frame to the swinging boom so as to support the latter, and also for anchoring the frame to the hull; the object being to connect and arrange these parts in such a way as to relieve the top of the mast and its pivot from the strain caused by the weight of the boom and the suspended bucket.

The invention is fully illustrated in the accompanying drawings in which—

Figure 1, is a side elevation broken away so as to show only the upper portions of the mast and the A frame. Fig. 2, is a front elevation with the mast removed. Fig. 3, is a plan view. Fig. 4, is a modification.

In the drawings, A represents the mast composed of a single piece of timber and having at its upper end a pintle 1. It is to be understood that this mast is stepped in one of the beams or timbers of the hull, and that the swinging boom is connected to it near its lower end so that the mast and the boom move together.

Adjacent to the mast is the A-frame, composed of heavy timbers B, B, C, the two former of which extend from opposite sides of the hull converging at the top, and the latter extending from a point on the hull near the stern so as to brace the frame fore and aft.

D, represents a heavy casting to which the timbers which form the A frame are bolted. This casting has a front plate D′, which extends down in front of the timbers B, B, and is bolted to them, as shown at 2, (Fig. 2.)

Formed with the casting and located near the upper edge of the front plate D′, are lugs 3, 3, between which is inserted the end of a link 4, a pin 5, connecting the parts and permitting the link to swivel freely. This link is connected, as shown, to the hog chain or tension rod 6, which, it will be understood, is carried forward and connected to the extreme end of the swinging boom. Instead of using this link, however, the hog chain itself can be connected directly by means of the pin 5.

At or near the bottom of the front plate D′, is a lug 7, having a vertical perforation within which the pintle at the top of the mast fits and turns freely. For convenience in construction I prefer to form this lug as shown in Fig. 3, in which the bearing for the pintle is made partly in the lug itself and partly in a cap or plate 8, bolted to it as shown at 9. This construction permits the parts to be fitted without difficulty after the casting has been secured to the A frame.

The bracing timber C, abuts against the inclined plate E, of the main casting and is bolted to it as shown at 10. The upper part of the casting is formed with perforated lugs 11, inclined so as to give the proper diagonal direction to metallic braces or tension rods 12. As shown in Fig. 3, I prefer to use five of such rods, one extending along each of the timbers of the A frame and the other two connecting the casting to intermediate points on both sides of the hull. When all these parts are in position, and the dredger is at work it will be seen that the strain produced by the weight of the boom and of the suspension chains and buckets is transmitted through the forward hog chain directly to the casting, which in turn is bolted to the A frame; and that this strain is distributed through the rear timber of the A frame and the various tension rods to the rear part of the hull. The mast is swiveled in the casting so far below the line of strain that its pintle is almost entirely relieved from it; and thus I not only avoid the liability of breaking off the pintle, but I prevent it from binding or becoming jammed in

its bearings and thus insure a free movement for the mast and boom.

In Fig. 4, is shown a modification in which the hog chain is connected to a single lug formed with the casting by means of a forked link through which and the lug the pivot pin passes.

Having described my invention, what I claim is—

1. In combination with the mast of a dredger and with the A-frame composed of side and rear converging timbers, a casting fitted and bolted to all the timbers of the frame and having a bearing in which the upper end of the mast is swiveled, substantially as set forth.

2. In combination with the A-frame composed of side and rear converging timbers, a casting fitted and bolted to said timbers, lugs on said casting at or near its top for connecting it to the hull of the dredger and to a swinging boom, and a bearing near the lower end of said casting for the top of the dredger mast, all constructed and arranged so that the strain transmitted from the boom is distributed through said casting and tension rods, on a line above the top of the mast, substantially as set forth.

3. A casting adapted to fit and be secured to the A-frame of a dredger and having a lug adapted to form a half bearing for the top of the mast, and a plate bolted to said lug and forming the other half bearing, substantially as set forth.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 26th day of May, 1893.

WILLIAM B. PLESS.

Witnesses:

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A. MCKENZIE.