G. T. Beauregard.

Dredger.

No. 10,147. Patented Oct. 26, 1853.

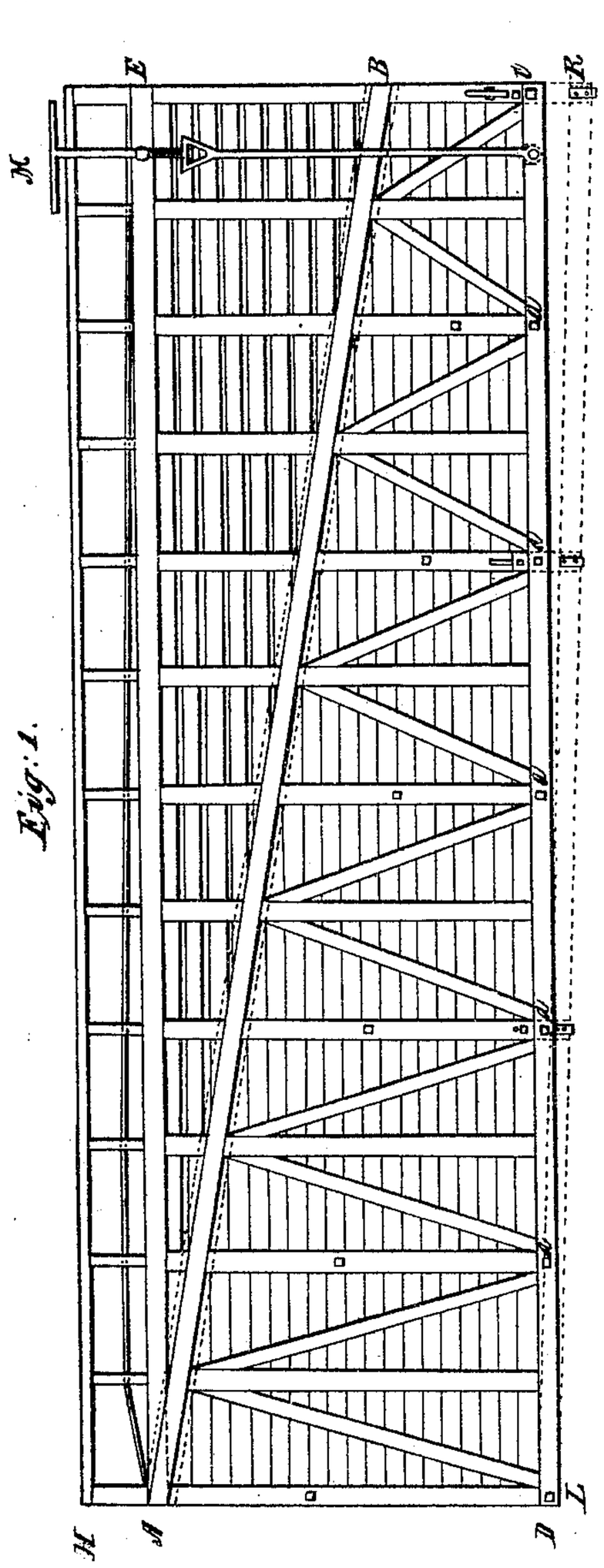

Fig. 1.

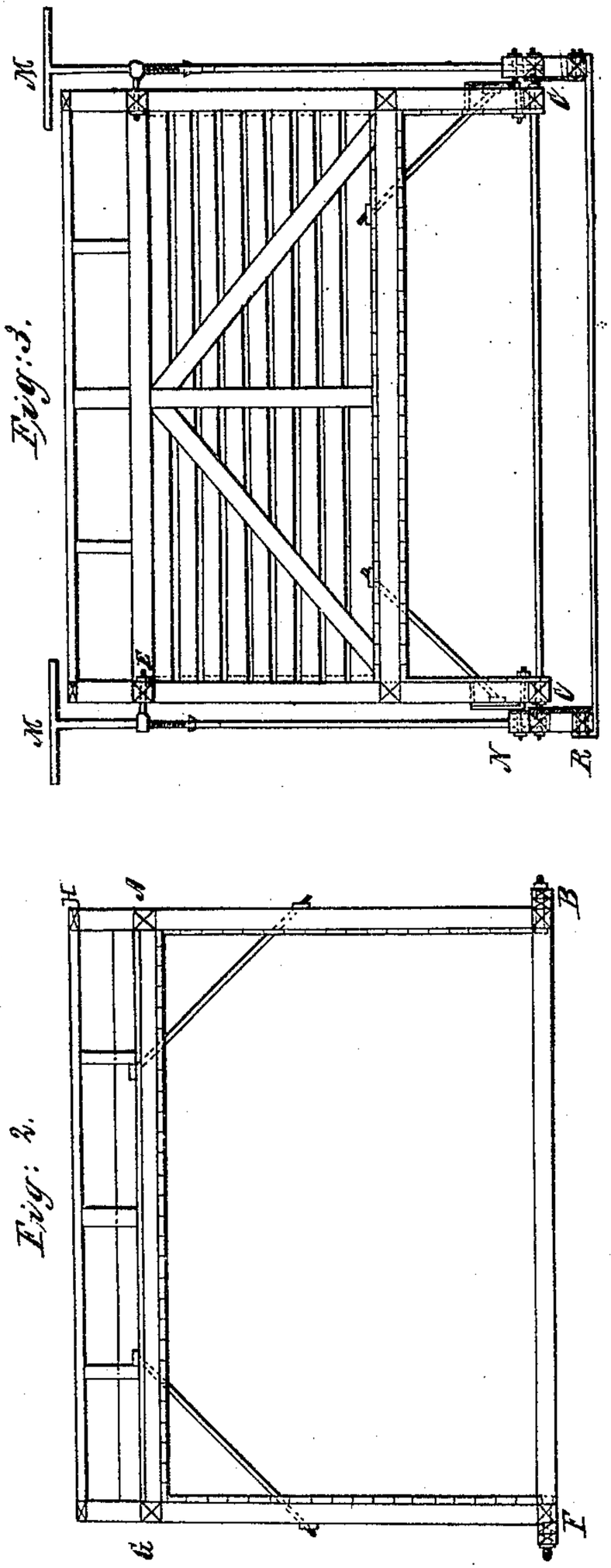

Fig. 3.

Fig. 2.

Inventor.

G. T. Beauregard

UNITED STATES PATENT OFFICE.

G. L. BEAUREGARD, OF NEW ORLEANS, LOUISIANA.

SELF-ACTING BAR-EXCAVATOR.

Specification of Letters Patent No. 10,147, dated October 25, 1853.

To all whom it may concern:

Be it known that I, G. T. BEAUREGARD, brevet major and captain of engineers, of and residing in the city of New Orleans, Louisiana, have invented a new, cheap, efficacious, and simple mode of removing bars at the mouths of rivers or bays possessing a current not strong enough to remove it of itself to a sufficient depth for the demands of commerce; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of my self-acting bar-excavator, reference being had to the annexed drawings, making a part of this specification, and in which—

Figure 1, represents the side view or longitudinal elevation and Fig. 2 the front view or cross section on the line A, D, and Fig. 3, the same on the line E, C.

The invention consists in a large box made of heavy timbers strongly framed and bolted together, its size to be determined by circumstances and the object in view.

The accompanying drawings and model represent one 20 feet high, 30 feet wide and 75 feet long intended to open a channel 20 feet deep. It is opened at both ends and at the bottom, the top also made of heavy timbers and planking, slopes down to about one half of the depth of the channel required or of the depth of water on the bar to be removed—this depending upon the velocity of the current and nature of the bar. The sides are parallel to each other as A, D, and F, G, Fig. 2 and made close jointed to their intersection with the top A, B, which is also close jointed. Above that they are open-jointed so as to admit the water freely in and out. The box when used alone should be provided in front with four anchors and their cables, which should be sufficiently long.

To use the bar-excavator it is floated in position and anchored at the inner edge of the bar in the thread of the strongest current, at about the depth which it is desired to obtain. The top of the excavator is then loaded with sand-bags or other weights to sink it so that the bottom of its sides will remain in close contact with the bar. The current of course will pass into its larger opening, A, D, and force its way out of its smaller one at B, C, until it shall have excavated the bar about that point to the requisite depth, when by easing gently and gradually on two of the anchors (one on each side) it is evident that the current striking still on the inclined top A, B, will then move the excavator forward to the shallower portion of the bar, where it will again be belayed and the same operation will thus be continued until the deep water on the other side of the bar is attained. For a wider channel the same process can either be repeated alongside of the first one already excavated, or several of the boxes can be fastened together side by side and allowed to operate together, which would very likely be the best way. The object of the two sets of anchors, is to be able to keep the bar-excavator in position while bringing in the length of cables already paid out.

To prevent the bar-excavator from sinking after having attained the proper depth or reached deep water, a certain number of empty casks is firmly secured along its upper part A, E, Fig. 1, at the requisite height; by their buoyancy calculated to counteract the superabundant weight required to sink the box on the bar, that object will be effected.

To maintain the sides together without at the same time intercepting the effects of the current on the bar they are firmly secured to each other along their bottom timbers by means of long iron rods and bolts marked *a*, *a*, *a*, on Fig. 1. These sides should also be strongly fastened to the top A, B.

It is a well established fact in engineering that the surface current about the bars in all rivers is much stronger than the bottom one, the ratio being generally as 2 to 1—hence if the former can be made to act also on the bar with a force increased by the velocity due to the shape and construction of my bar-excavator it becomes evident that none but a rocky bar could possibly resist its continued action. The application of that principle by means of my bar-excavator is then what I consider as my invention, for no similar application or construction has ever yet, I verily believe, been made. Heretofore it is well known, the only methods recommended for removing bars, have been either by dredging machines and boats, harrows and plows—or jetties contracting laterally the channel, all of which are not only expensive but very doubtful in their results in many instances and impracticable in others, as the discussions which have been

going on for many years on the subject of the removal of the bars at the mouths of the Mississippi river fully attest.

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

The bar-excavator in which the surface current by means of the inclined plane, is deflected downward and made to act upon the bar—the whole being arranged and operated substantially as herein described.

G. T. BEAUREGARD.

Witnesses:

P. H. RAMOND,

W. H. STEVENS.