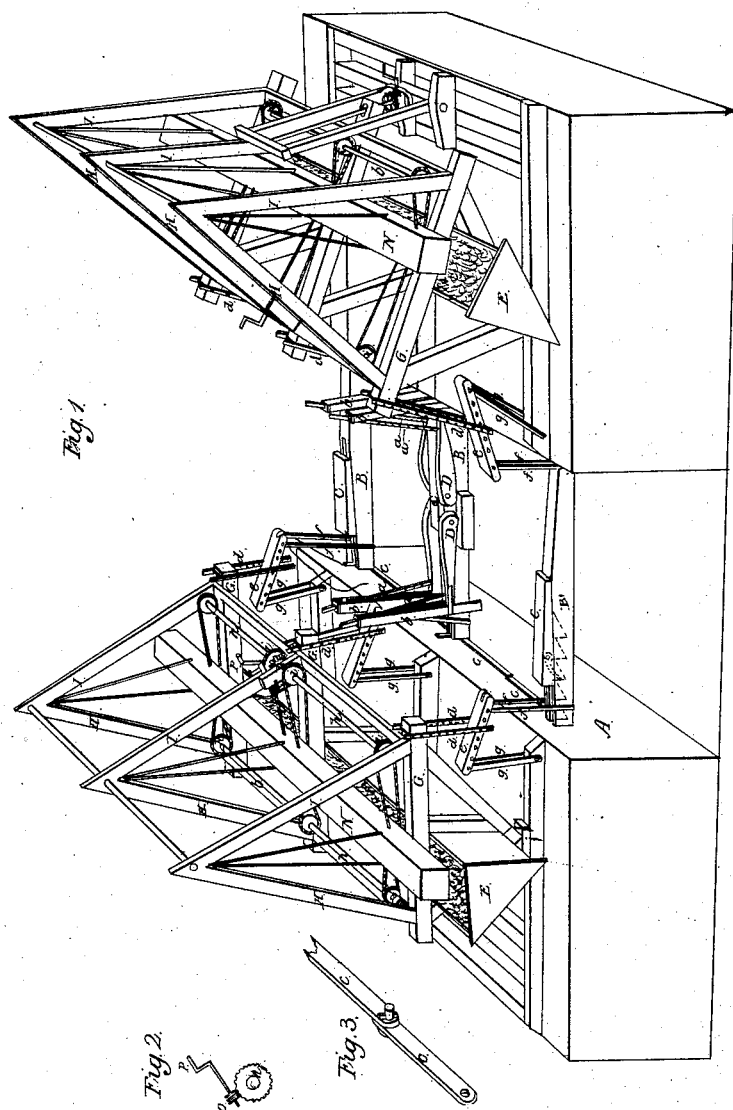
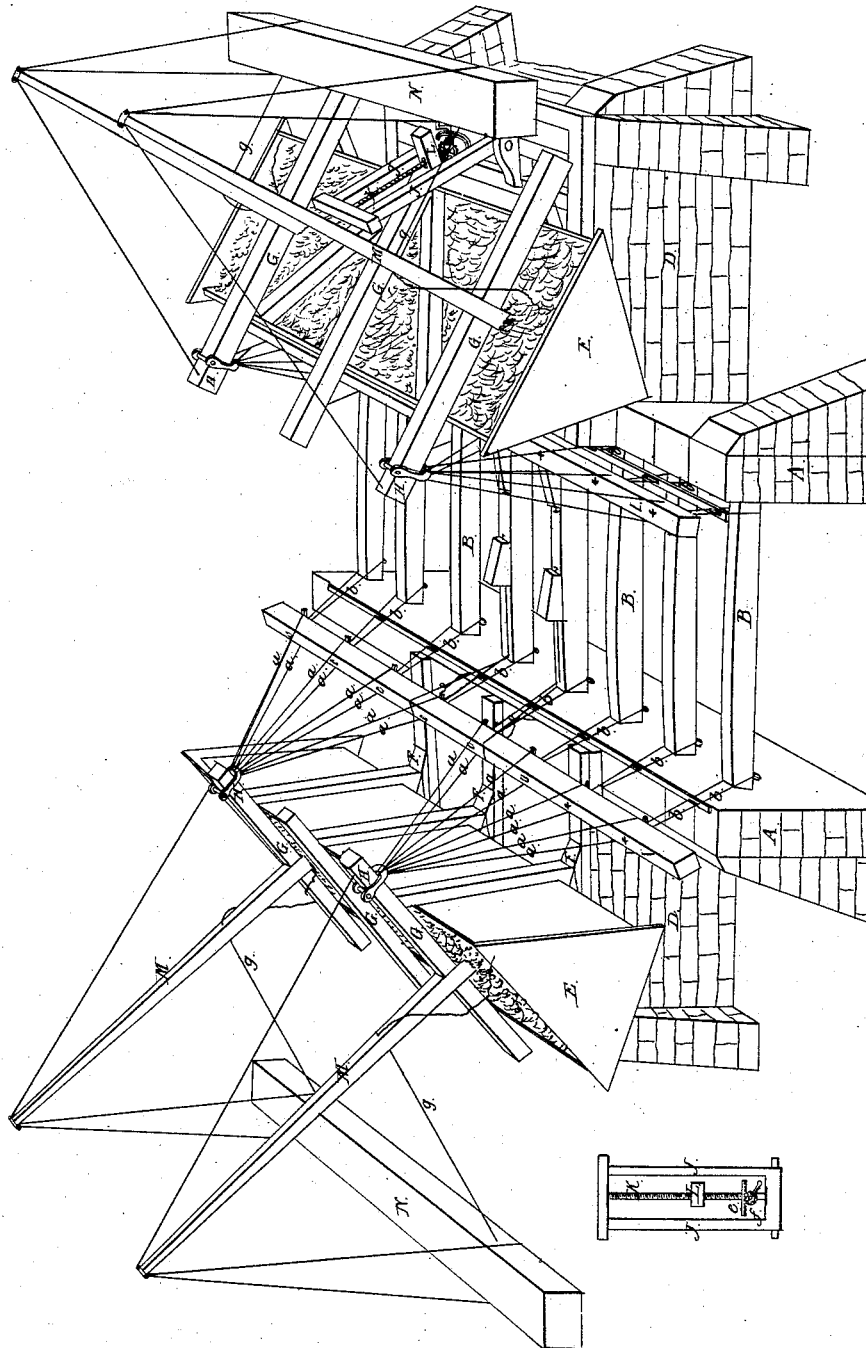


T. Bell,
Dry Dock,
No 1,009. *Patented Nov. 14. 1838.*



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UNITED STATES PATENT OFFICE.

THOMAS BELL, OF BROOKHAVEN, NEW YORK.

APPARATUS FOR LIFTING SHIPS AND OTHER VESSELS FROM THE WATER.

Specification of Letters Patent No. 1,009, dated November 14, 1838.

To all whom it may concern:

Be it known that I, THOMAS BELL, of Brookhaven, in the county of Suffolk and State of New York, have invented a new and improved apparatus to be used for the purpose of lifting ships and other vessels or heavy bodies from the water whenever it may be necessary to examine or repair them; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing A, A, represents the walls of a dock into which the vessel to be raised is conducted, B, B, B, the cross timbers, or beams of a cradle upon which the keel is to rest; upon which beams there are to be chocks C, C, so constructed as to support the keel and sides of the vessel, which are to be employed with such shoring or other means of support as may be deemed necessary by the practical workmen, and which do not require to be described, as they need not differ from such as are well known, and in common use. The keel blocks or chocks C, C, I fix in grooves upon the cradle beams and attach tackle to them by means of suitable pulleys, in such a manner as that they may be drawn closely up against the keel and bilge of the vessel, as she is raised out of the water.

On each side of the dock I build solid abutments D, D, which are to support the apparatus to be placed thereon, which I denominate the balance power. This balance power consists principally of two triangular boxes, E, E, composed of timber strongly framed together, and closely planked on the sides, so that they may hold sand, or such other heavy article as may be placed within them. The bottom angles of these boxes are sustained upon cast iron steps, or supports F, F, F, said angles being strongly shod with iron, and so formed as, with the steps, to constitute a joint upon which said boxes may tilt without the danger of their being displaced. To the upper edges of these boxes, I secure two, three, or more levers G, G, G, which must be of such length that by the tilting of the boxes E, E, the cradle, with the vessel thereon shall be raised to the required height. On the inner ends of these levers I place stout iron clevises, or stirrups H, H, from which descend rods *a*,

a, *a*, *a*, which are secured at their lower ends to the longitudinal timbers I, I; from these timbers, rods *b*, *b*, descend to the cradle beams, the pieces *c*, *c*, serving to guide them, and keep the beams at a proper distance apart.

The triangular boxes are represented as tilted over from the dock, in the position occupied by them when the vessel is raised. This tilting is effected by one or more governing screws, working in a governing screw frame, attached to stout timbers which are framed together, and form the capping or upper part of the abutments D, D; this screw frame is shown at J, J, and separately in Fig. 2. It is attached to the timbers of the abutments by the passing of the gudgeons *d*, *d*, through eye bolts on the timbers.

K, is a stout screw which turns on gudgeons in the frame at each end; it has affixed to it a crown wheel *e*, into which gears a pinion *f*, which is turned by a winch, and gives motion to the screw.

In the timber L, making a part of the upper edge of the frame work of the boxes E, E, there is a strong nut, which swivels on gudgeons, and through which the screw K, passes. It will be seen that by this arrangement the balance power is tilted or elevated at pleasure; in doing which, care must be taken that the respective screws are turned equally and simultaneously. Were the vessels to be raised always of the same weight the balance power might be exactly adapted thereto; but as the weight will vary greatly, I append to the apparatus above described the spars M, M, which are made strong and are firmly fixed in the boxes E, E, like masts in a vessel; and from the upper ends of these spars I suspend weighted boxes, or troughs, or blocks of metal, N, N, which as the boxes are tilted will swing out, and will greatly contribute to the effect of the balance power, and that in a degree proportioned to their weight, which may be regulated at pleasure; when swung far enough they may be secured by the ropes *g*, *g*. The spars are to be secured by braces, and they may be operated upon by guys, should it be deemed necessary.

Having thus given a full description of my apparatus for the raising of vessels, and pointed out the manner of using the same,

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

5 The manner of constructing, combining, and operating the tilting boxes by the employment of the governing screws, formed and used substantially in the way herein set forth; and I also claim, in combination

therewith the weighted bodies, suspended from the upper ends of spars in the manner and for the purpose herein set forth.

THOS. BELL.

Witnesses:

LINTON THORN,
C. H. DILBERGER.