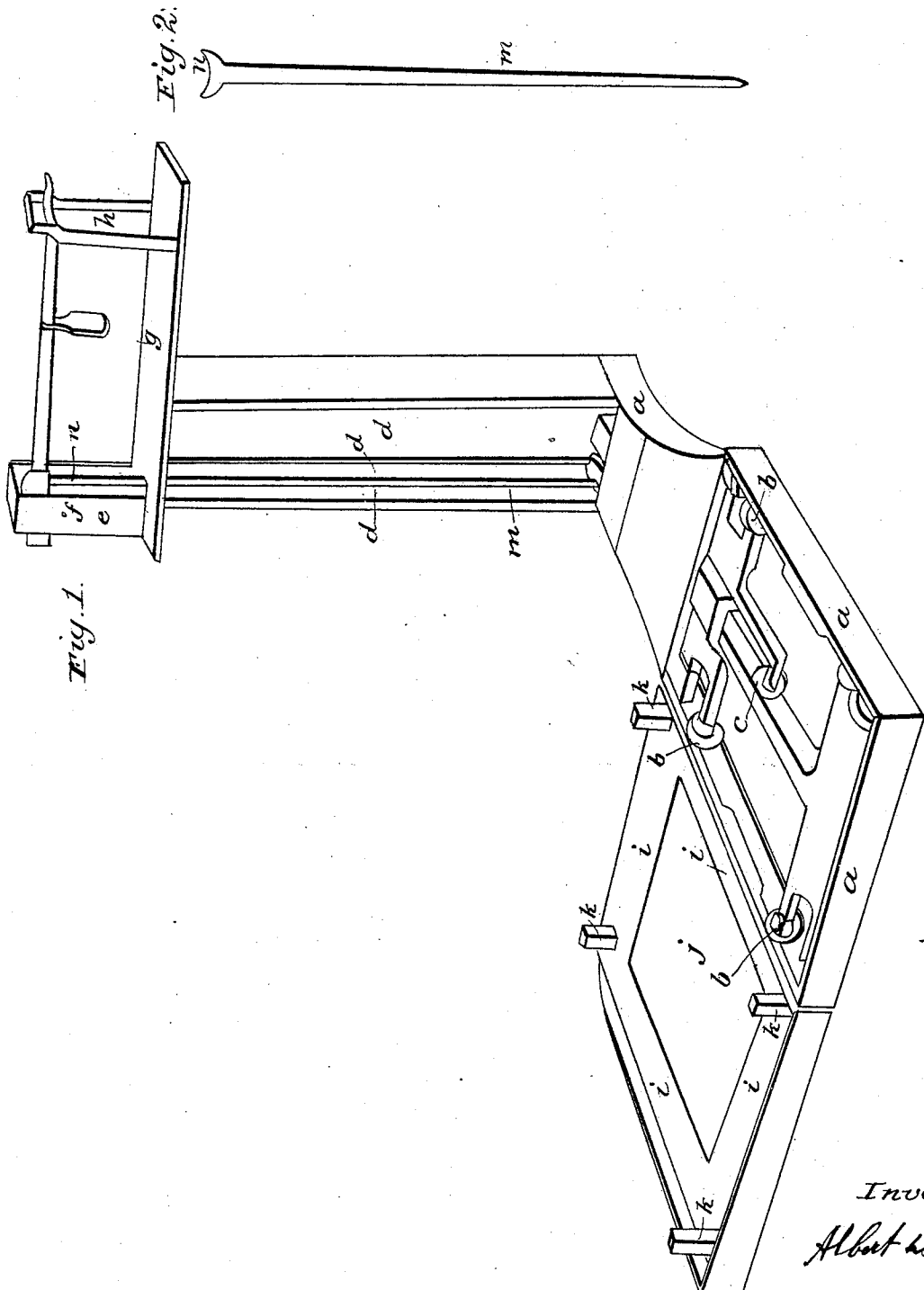


A. DOLE.
Balance Scales.

3 Sheets—Sheet 1.

No. 1,699.

Patented July 18, 1840.



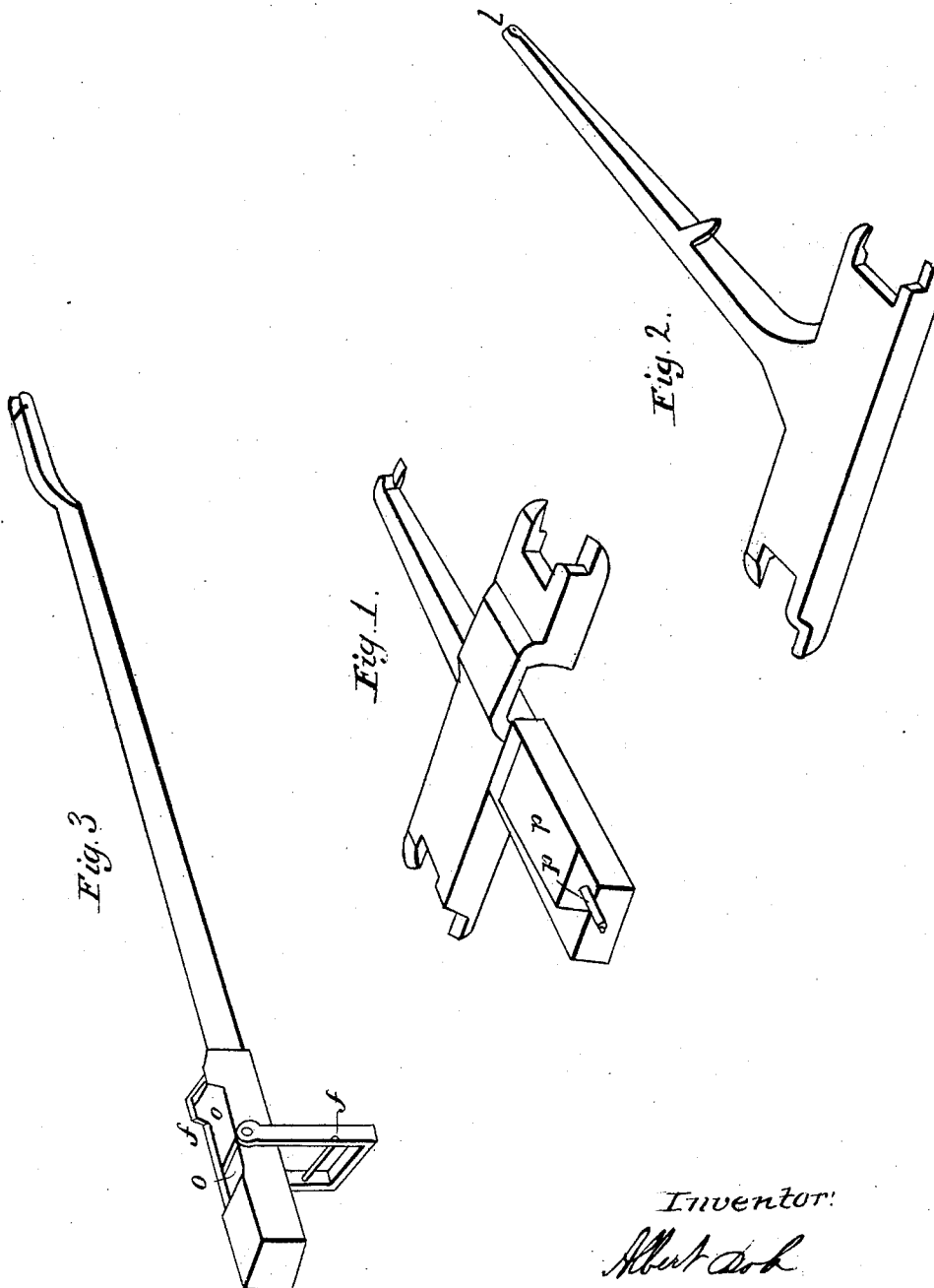
Inventor:
Albert Dole

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3 Sheets—Sheet 2.

No. 1,699.

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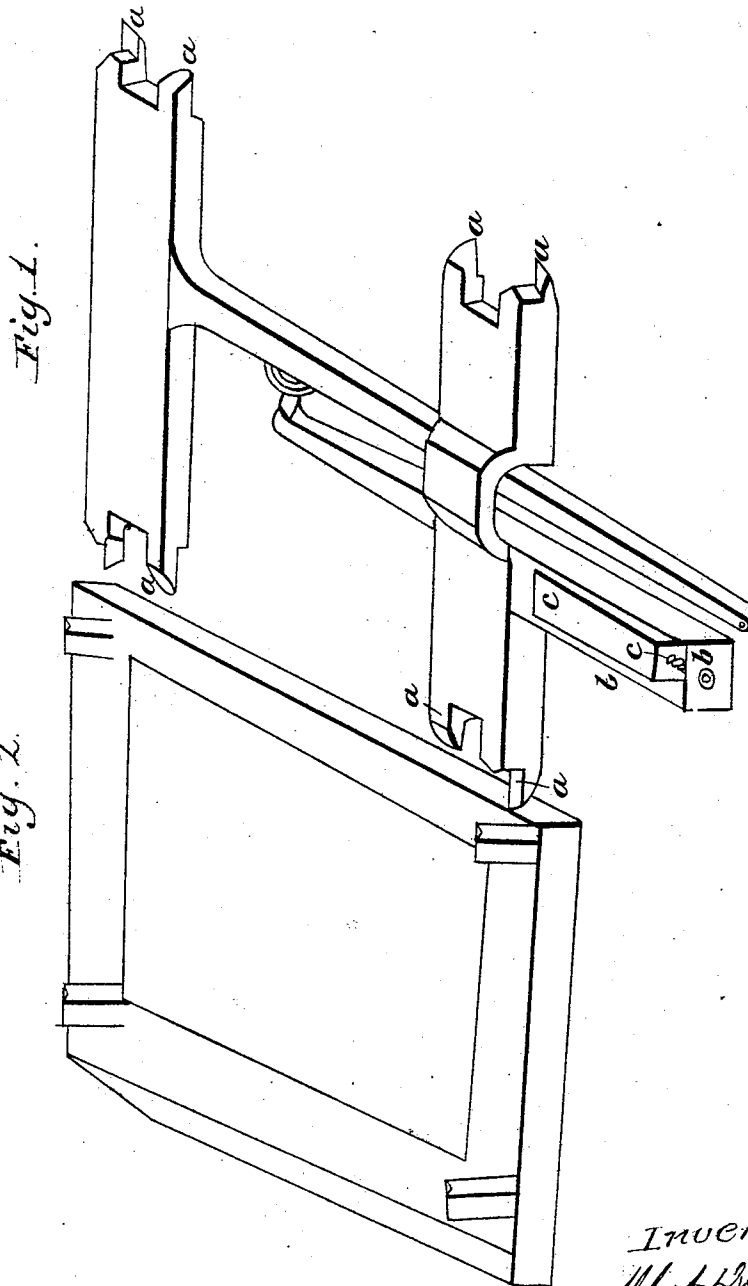
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3 Sheets—Sheet 3.

No. 1,699.

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Inventor.
Albert Dole

UNITED STATES PATENT OFFICE.

ALBERT DOLE, OF BANGOR, MAINE.

CONSTRUCTION OF PLATFORM-BALANCE.

Specification of Letters Patent No. 1,699, dated July 18, 1840.

To all whom it may concern:

Be it known that I, ALBERT DOLE, of Bangor, in the county of Penobscot and State of Maine, have invented a new and

Improved Method of Making and Constructing Platform Balances or Scales for Weighing Merchandise and other Articles; and I do hereby declare that the following is a full and exact description.

The nature of my invention and improvements consists in making a cheap, portable, accurate and strong platform balance or scale for weighing merchandise and other articles. The bottom frame or box is made of cast iron of a square form, with a projection at one end, about four inches high. (See Pl. I Fig. 1 *a a*.) On the inside of this frame, near each corner, is a hook or bearing, cast with the frame, on which is suspended a ring in which the fulcrum of the levers rests. (See Pl. Fig. 1 *b b*.) The levers are made of cast iron and are cast whole; the long arm lever is nearly the shape of the capital letter T, the top part of the T shape is about 4 in. wide and two inches thick, and 18 in. long; having at each end a projection or arm on the side of the long projection, near the top fitted to play in the rings forming the fulcrums; and at each end opposite the longest extension is a similar projection or arm, at the bottom, a few inches beyond the fulcrums, on which to rest the legs or bearings of the platform. The arms for the fulcrums, are finished with the bearing point downward, and the arms for the legs of the platform to rest upon, are finished upward, so that when placed in the frame the edges of the bearing points are on a horizontal line. [For a description of the arms to the levers just spoken of see Pl. III, Fig. 1 *a a a a*.] The arm of this long arm lever extends, at a right angle from the center of the top part described, and this arm is two feet long. There is an arm or bearing point upon one side of this arm, near its center, to hold the ring that connects the two levers; and at the end there is a hollow or depression to form a socket in which to rest the point of the rod connecting with the scale beam. The short arm lever is similar in shape but the arm is shorter, and upon the end has a point or bearing to place in the ring that connects the two arms of the levers, at the center of the long arm of the long lever. It has also a swell in the wide part or top to allow the

long arm of the long arm lever to pass under and has also a box, or chamber cast on the opposite side from the arm. (See Pl. III Fig. 1 *b b*.) This box or chamber is for the purpose of holding the regulating block. (See Pl. II Figs. 1 and 2.) The regulating block is made of lead and fitted to traverse in the chamber by means of a screw, for the purpose of balancing the scales. (See Pl. II Fig. 1 *p p*, also Pl. III Fig. 1 *c c c*.)

The upright portion of the scale frame is a square box made of wood, is 2 ft. 6 in. high from the top of the bottom frame, and is 6 by 4 inches square, having on one side a door to open for the purpose of adjusting the regulating block. This upright part is connected with the frame, and secured by two iron bolts passing from the top down through the same to the bottom frame. These rods are fastened by a head at one end and a nut and screw at the other end. There is a small projection, or lip, cast with the bottom frame, through which these rods pass. On the top of this upright part is a wooden shelf, secured at one end by the bolts mentioned. This shelf is 22 inches long and four inches wide. (See Pl. I Fig. 1 *g*.) Upon the end of this shelf, directly over the upright box is a cast iron chamber with two sides open. This chamber is 10 inches high and three inches square, and is secured in its place by screws and by one of the rods before named (see Pl. I Fig. 1 *f, e*.) In this chamber is the fulcrum of the scale beam, and of the shackle. The shackle is an iron loop resembling somewhat the capital letter U. The fulcrum of the scale beam bears upon loops in the ends of the upper part of the latter, while the fulcrum of the shackle is an iron pin passing through the loop or letter U and through the sides of the iron chamber. (See Pl. II Fig. 3 *f f*, Pl. I Fig. 1 *f*.)

I construct my steelyard beam in any of the usual forms, excepting at the end at and near the fulcrum. At this part of the beam, it is about one inch thick and is cast hollow with top and bottom open, while at the extreme end it is solid. This hollow chamber in the beam holds the pin or bearing to the connecting rod, and, also the pin which projects through each side for the fulcrum of the scale beam. (See Pl. II Fig. 3, *o o*.) Near the small end of the beam, is secured to the shelf, a check formed of two upright shanks and a cross bar of

iron to check the end of the beam from two wide a range either perpendicular or horizontal. (See Pl. I Fig. 1 *h*.)

5 The top or platform, of the bottom frame or box, on which to place the articles to be weighed, is a cast iron frame (see Pl. I Fig. 1 *i i i*) having the center of wood. (See Pl. I Fig. 1 *j*.) This frame has a crotched leg at each corner (see Pl. I Fig. 1 *k k k k*)
10 to fit on the bearings on the levers in such a manner as to have full play without interference with any part of the frame.

I have an iron rod pointed at the bottom and crotched at the upper end to connect
15 the end of the long arm lever with the scale beam. (See Pl. I Fig. 2 *m n*.) This rod rests in the socket at the end of the long arm lever, and passes up through the upright part of the scale frame, and the upper

end bears against the iron pin in the chamber of the scale beam, giving a rising motion to the steelyard beam which balances over the rod. 20

What I claim as my invention and improvement, and for which I desire to secure by Letters Patent is, 25

Constructing the levers with bearing points beyond their centers or fulcrums, for the feet of the platform to rest upon, and placing upon the end of the long lever a vertical rod extending to the beam above and upon which it rests, the whole being constructed in the manner and for the purposes described. 30

ALBERT DOLE.

Witnesses:

JEROME B. LORD,
JOHN S. SAYWARD.