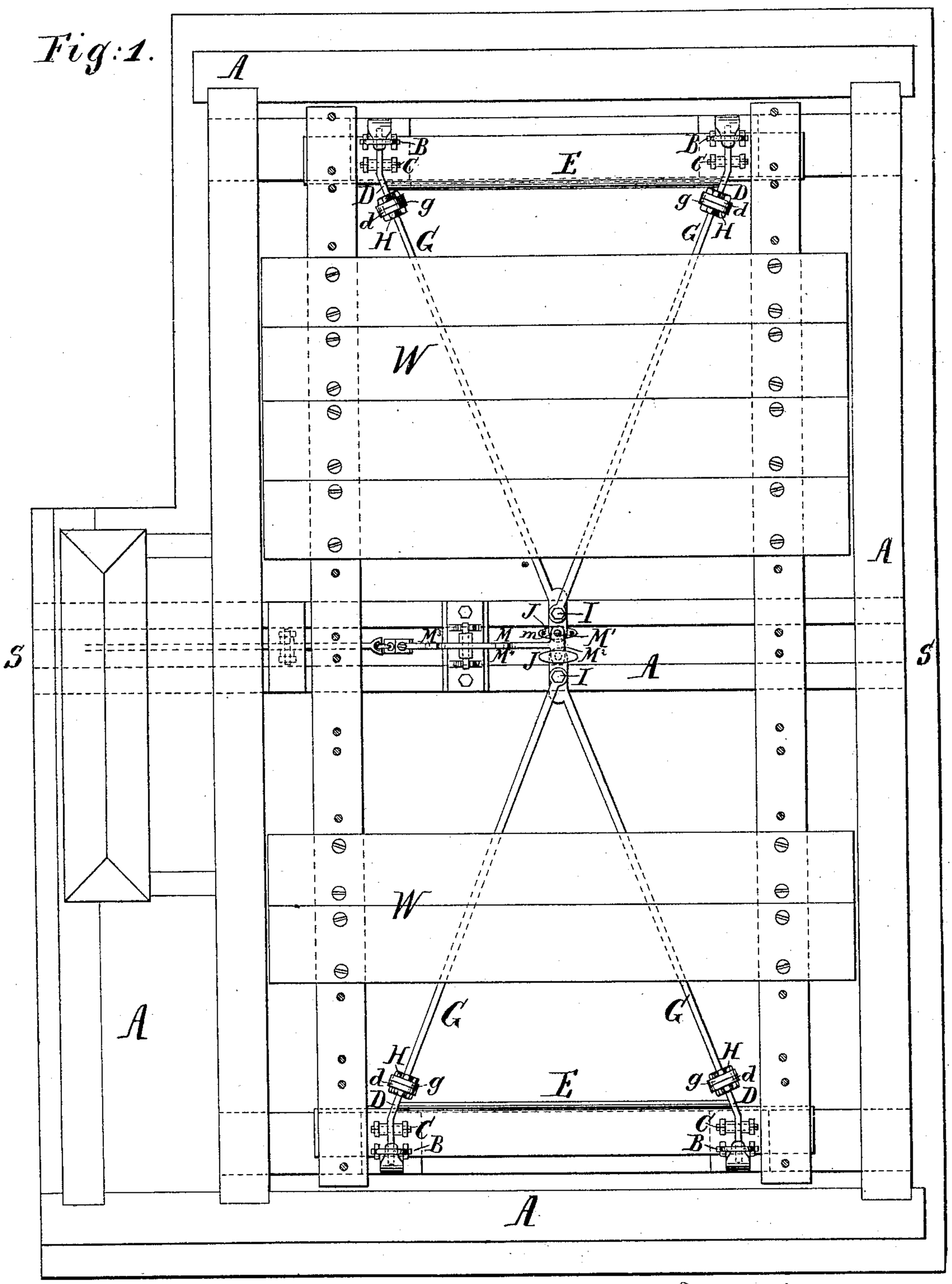
2 Sheets—Sheet 1.

T. FAIRBANKS.

WEIGHING SCALES.

No. 175,596. Patented April 4, 1876.

Fig: 1.



Witnesses:
A. Henry Gardner
F. Parkhurst

Inventor:
Thaddeus & Fairbanks
by his attorney
H. L. Stetson

2 Sheets—Sheet 2.

T. FAIRBANKS.

WEIGHING SCALES.

No. 175,596. Patented April 4, 1876.

Fig: 2.

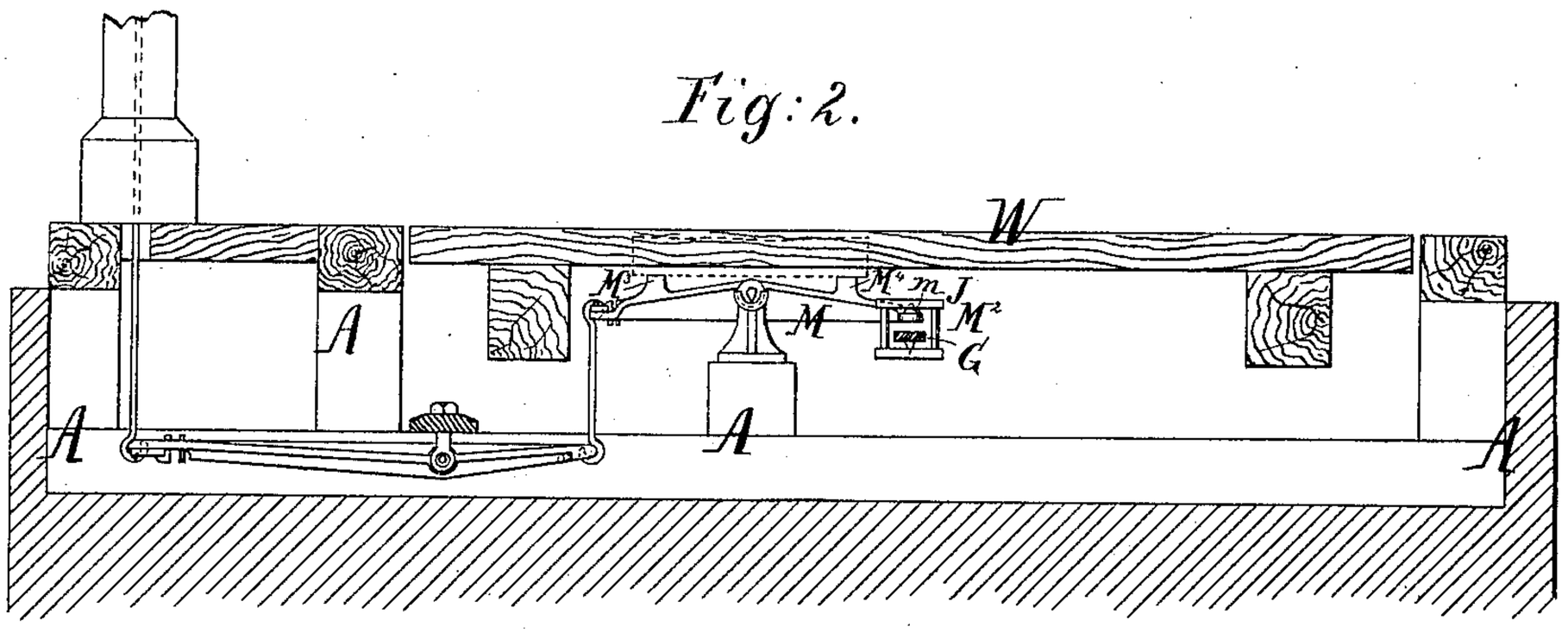
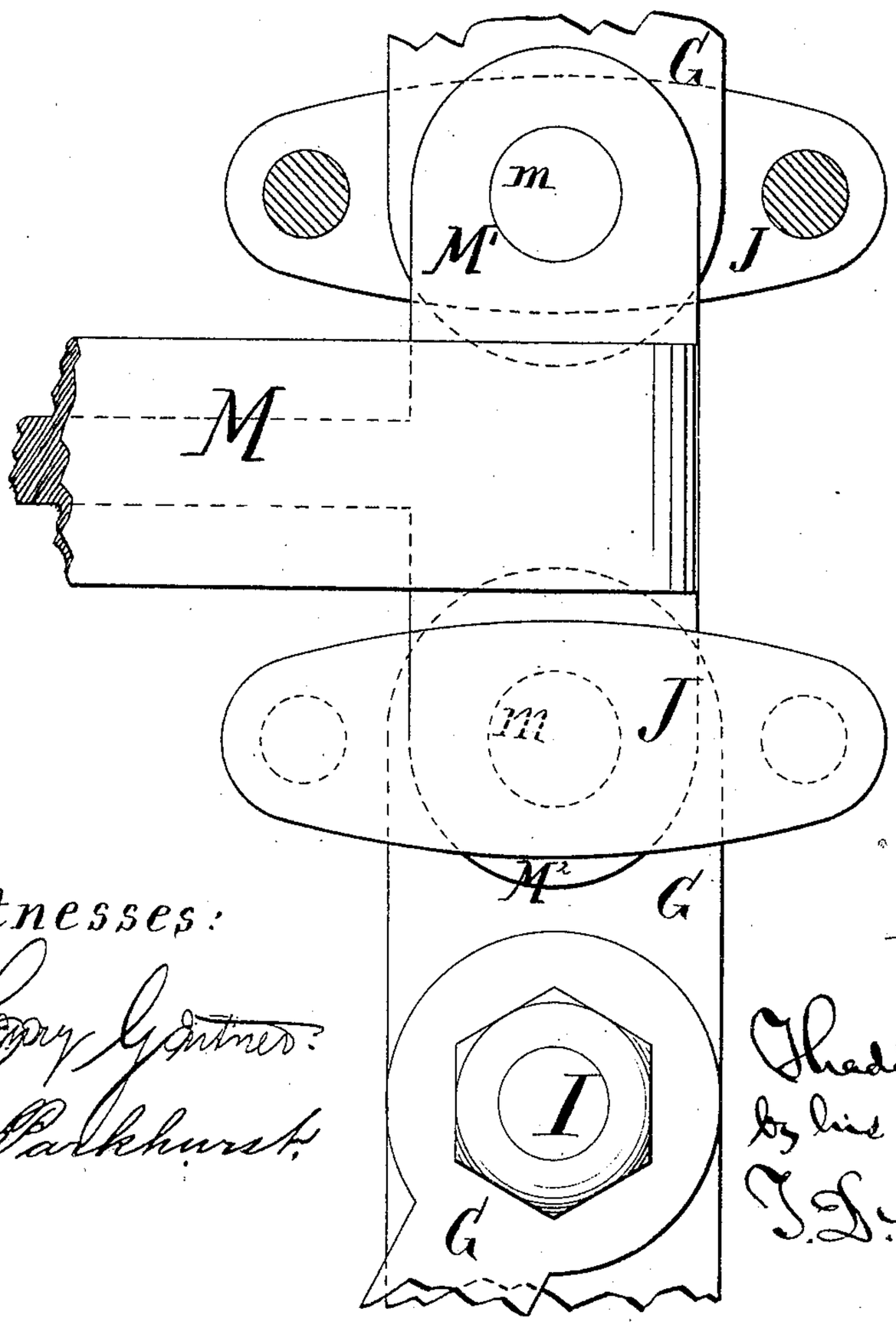


Fig: 3.



Witnesses:

A. Copy Gaines.

F. Parkhurst.

Inventor:

Thaddeus Fairbanks
by his attorney
T. D. Stetson

UNITED STATES PATENT OFFICE.

THADDEUS FAIRBANKS, OF ST. JOHNSBURY, VERMONT.

IMPROVEMENT IN WEIGHING-SCALES.

Specification forming part of Letters Patent No. **175,596,** dated April 4, 1876; application filed February 4, 1876.

To all whom it may concern:

Be it known that I, THADDEUS FAIRBANKS, of St. Johnsbury, Caledonia county, in the State of Vermont, have invented certain Improvements relating to Weighing-Scales, of which the following is a specification:

The patent to me dated May 11, 1875, describes the long triangular levers as cast each in a single piece. I have devised a mode of construction which is staunch and reliable, and allows each lever, made in separate parts, to be transported with greater facility and less cost, and be put together at the place where the scale is wanted. I have also improved the mechanism by employing a train of lateral levers with a T end, receiving separate yokes or links from the two main levers.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a plan view, with some of the planks of the platform removed to show the peculiarities below. Fig. 2 is a cross-section on the line S S in Fig. 1; and Fig. 3 is a plan view, showing certain parts on a larger scale.

Similar letters of reference indicate like parts in all the figures.

A are the fixed parts. B B are the knife-edges by which the main levers are slung up by suitable links, and C C are the knife-edges to which the platform W is suspended by suitable links, all as in my patent of May 11 aforesaid. The several knife-edges should be all parallel to each other. They are set in short stout pieces D, which are cast on or otherwise rigidly united to a piece of gas-pipe, E, of sufficient length to connect the two parts for the wide end of a main lever. G G are long arms, preferably tapering, and formed with broad flanges *g*, which match fairly and firmly against corresponding flanges *d* on the parts D, and are rigidly bolted thereto by fastenings H. One or more bolts, I, join the ends of the arms G G. The lateral lever M, turning on a suitable knife-edge, is formed with a T end, M^1 M^2, carrying conical points *m m*. Yokes J communicate the strain from corresponding points on the ends of the triangular main levers G G.

The improved construction has few bearings, and is easy to construct and keep in order. It allows for the motion of the platform and its supporting-levers in all directions, either due to a temporary swinging or to a permanent settling or disturbance of position. The mechanism for a large scale can be shipped in one box of moderate size.

Some of the details may be modified without defeating the objects of the invention. Thus, instead of conical points *m*, with corresponding conical points on the levers below, each lever may have knife-edges, taking care to employ links and connections which will allow slight swinging movements in all directions. Each cross-connection E may, instead of a hollow pipe, be a solid bar; or it may, if preferred, be a connection of cast-iron extended across.

The invention may be worked with advantage with only the features above described. But I have added a feature very important in practice as a means for insuring the correct horizontal position of the several levers. I form the T-ended lateral lever with two projections, M^3 M^4, one on each side of its central knife-edge, the upper surfaces of both being plane. Laying an ordinary level on these projections M^3 M^4, the lever M may be set horizontal, and all the other parts adjusted to stand in corresponding positions. These projections M^3 M^4, formed in the casting, and holding their upper faces in the same plane each with the other, the plane being sufficiently above the apex of the center of the lever to hold the level entirely clear thereof, constitute an extremely simple, but highly efficient, aid to overcoming one of the greatest difficulties in setting up scales of this class.

Some of the advantages due to certain features of the invention may be separately enumerated as follows: First, by reason of the fact that the main triangular lever is made in pieces with fastenings, as shown, I am able to ship the mechanism for a large scale in a box of moderate size, and with certainty and dispatch put the parts in firm and rigid connection to form a reliable scale. Second, by reason of the separate yokes J J, suspending the main levers D E G independently to the lateral lever, in connection with the branched

or T-ended construction of the latter, as shown by M M^1 M^2, I am able to allow one end of the platform to vibrate or swing without the other, or to allow the platform to twist in every direction, within moderate limits, without disturbing the relations of the connections. Third, by reason of the flat-topped projections M^3 M^4 on one side and the other of the center of the lever M, I am able to conveniently determine an exact level position for this lever by an ordinary mechanic's instrument, and can then from that find the right positions for all the connected parts with certainty and with little labor.

I claim as my invention—

1. The main triangular levers, formed with separate arms, rigidly secured together and to the other parts by the fastenings H I, as and for the purposes specified.

2. The combination of the T-ended lateral lever M M^1 M^2 with suitable main levers, transferring the weight to the T-ended lever through separate yokes or links J J, substantially in the manner and for the purposes herein set forth.

3. The projections M^3 M^4 on opposite sides of the central knife-edge of the lateral lever M, adapted to receive and hold a leveling-instrument in a plane above, but parallel to, the bearings of the lever, as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand this 1st day of February, 1876, in the presence of two subscribing witnesses.

THADDEUS FAIRBANKS.

Witnesses:

ELIJAH D. BLODGETT,

PERLEY F. HAZEN.