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T. FAIRBANKS.
Platform Weighing-Scale.,

No. 205,623.

Patented July 2, 1878.

Fig. 1.

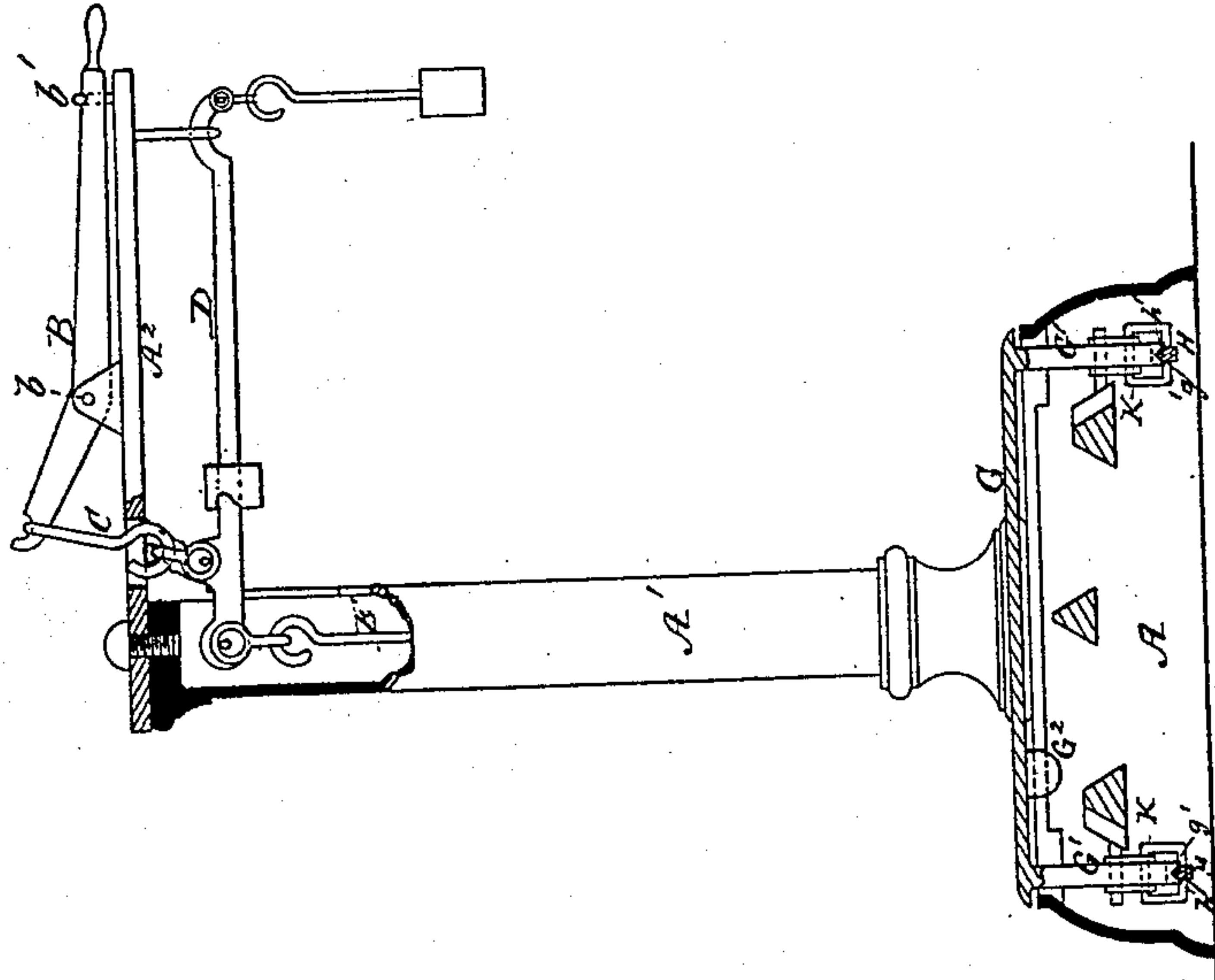


Fig. 2.

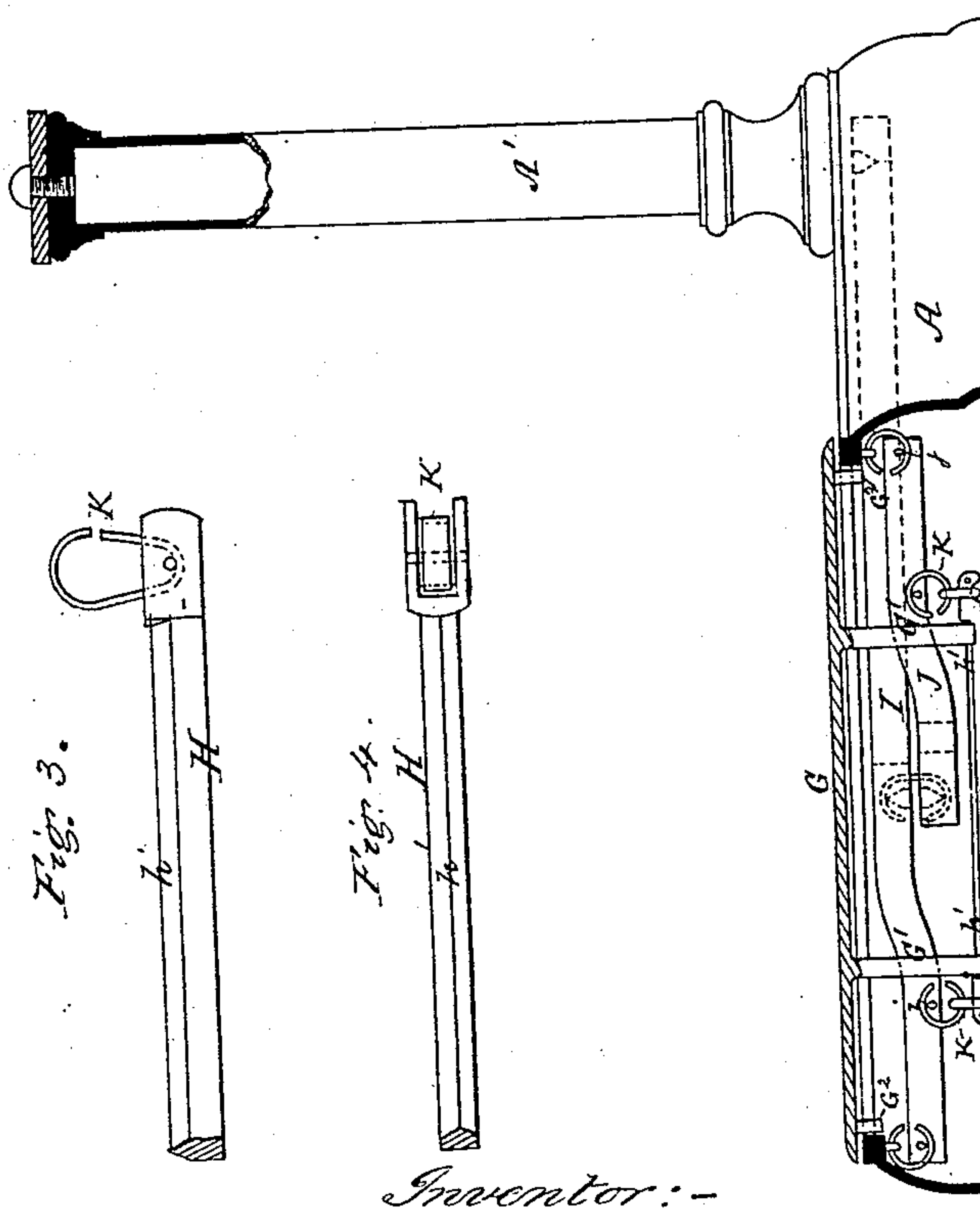


Fig. 3.

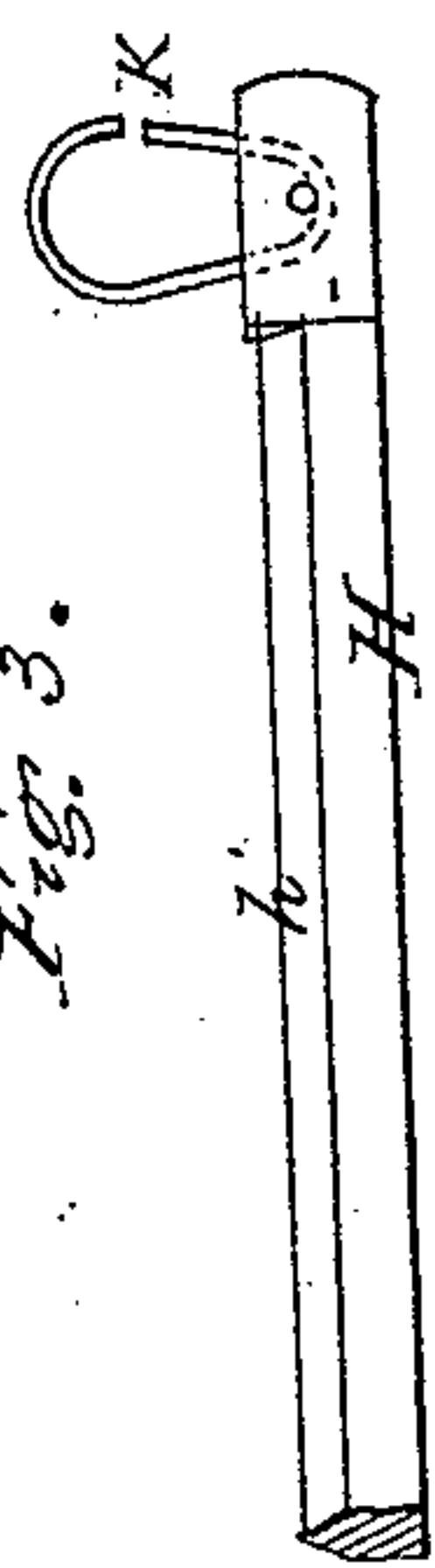


Fig. 4.



Attest:-

Frank Saunders
Chas. C. Stetson

Inventor:-

Thaddeus Fairbanks
by his attorney
Chas. C. Stetson

UNITED STATES PATENT OFFICE.

THADDEUS FAIRBANKS, OF ST. JOHNSBURY, VERMONT.

IMPROVEMENT IN PLATFORM WEIGHING-SCALES.

Specification forming part of Letters Patent No. 205,623, dated July 2, 1878; application filed May 18, 1878.

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 new and useful Improvements relating to Platform-Scales, of which the following is a specification:

The invention is intended more particularly for what are known as "drop-lever scales;" but it may be used with advantage without the drop-lever mechanism.

The object is to make the working more free. It allows vibrations and avoids cramping and friction on the knife-edges more completely and perfectly than any ordinary construction. It allows the platform to be removed and replaced with facility.

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 an end elevation of the entire scale, partly in section. Fig. 2 is a cross-section through the lower part, the upper parts being partly shown. The remaining figures show a modification of a portion. Fig. 3 is a side view, and Fig. 4 a plan view, of a slight modification of parts.

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

A is an ordinary foundation-casting, having an upright post, A¹, with a horizontal arm, A², rigidly connected, and supporting a drop-lever attachment, B, turning on a pivot, b, and secured by a catch, b', so that it may hold up the weighing-beam D by the connection C, and lower it with the weigh-rod E and its attachments, all in the ordinary manner.

The novelty lies in the work under the platform. The platform may be a single casting of cast-iron, the main body of which is indicated by G, and the bearing-arms, extending downward therefrom, by G¹, the shorter lugs, which check the endwise motion, being represented by G². The lower ends of the bearing-arms G¹ are formed with V-shaped cavities, as represented by g', which receive a longitudinal bar, H, which latter are each formed with a corresponding V-shaped ridge, h'.

The long lever I and short lever J may be of the ordinary long-approved construction, as indicated; but the object placed on the platform acts by gravity on the knife-edges of the levers, not directly, but through the medium of the bars H and of pendent links K, which may be either simple or compound, and which are free to oscillate on the knife-edges i j of the respective levers I J at their upper ends, and which so engage with the bar H that the latter may swing. The forms of these links K and their mode of engagement with the bars H may vary. It is not essential to correct weighing that the engagement of these links K with the bars H be frictionless, nor that it be confined to any particular position. In other words, the engagement of the links K with the bars H may be by knife-edges, or by a simple rolling contact, like the links of a chain. No difference will be made in the weighing by any possible amount of friction at the joints. A great friction at the connections of the links K with the bars H will simply retard the freedom of the swinging of the platform. It will have no effect on the leverage, and no appreciable effect on the freedom of working of the levers I J.

One construction of the links K is shown in Figs. 1 and 2, where the link is compounded of two parts, linked together.

Another mode of construction is by a simple link, as shown in Figs. 3 and 4. These figures show the knife-edges h' set in the forked ends of each bar H. I esteem this the preferable construction; but the construction shown in Figs. 1 and 2, or various others, may be adopted.

The ordinary raising and lowering of the platform by the tilting of the weighing-beam D in the act of weighing is allowed by the slight turning of the levers I J, the links K and the bars H maintaining their positions, except to rise and sink to correspond with the platform. In this movement of the levers I J the knife-edges i j describe so large an arc that the links K swing to an appreciable extent, thus inducing a turning motion at the junctions of the parts H and K; but a slight friction under these conditions is not objectionable. The knife-edge construction shown in Figs. 1 and 2, by presenting no friction, will

the drop-lever motion easier; but a considerable friction at those junctions involves no appreciable mischief.

When, by the operating of the drop-lever B, the levers I J and the connected bars H are lowered out of engagement with the arms G', the latter remain idle, and are liable, by any sufficient force applied to the platform, to change their positions horizontally to a small extent, so that when the bars H are again lifted they will not come into contact in the same positions as they parted. Again, the bars H are liable to swing or move, by some chance, one way or the other, so that the points of engagement may not be the same; but the V-shaped top h' of each bar H and the V-shaped recesses g' in each arm G' cause them to slide upon each other in coming in contact, and insure that the ultimate bearing position shall be practically the same.

No harm can result from a slight change of position of these parts. The weight will be always transmitted through the links K to the knife-edges $i j$ in an absolutely vertical line.

Changes in the bearing of the arms G' g' upon the bars H h' can only change the position in which the platform G is supported. Such changes, when thus constructed, are in theory, as in practice, unworthy of further mention.

I claim as my invention—

1. The longitudinal bars H h' and suspending-links K, in combination with a platform, G, having notched arms G' resting on said bars, levers I J, and suitable connections to a weighing-beam, D, as and for the purposes herein specified.

2. The longitudinal bars H h' and suspending-links K, in combination with a platform, G, having notched arms G', levers I J, having knife-edges $i j$, weigh-rod E, and beam D, substantially as herein specified.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

THADDEUS FAIRBANKS.

Witnesses:

E. D. BLODGETT,

D. DEAN PATTERSON.