E. SAMPSON.

Platform Scales.

No. 37,259. Patented Dec. 23, 1862.

Fig. 1

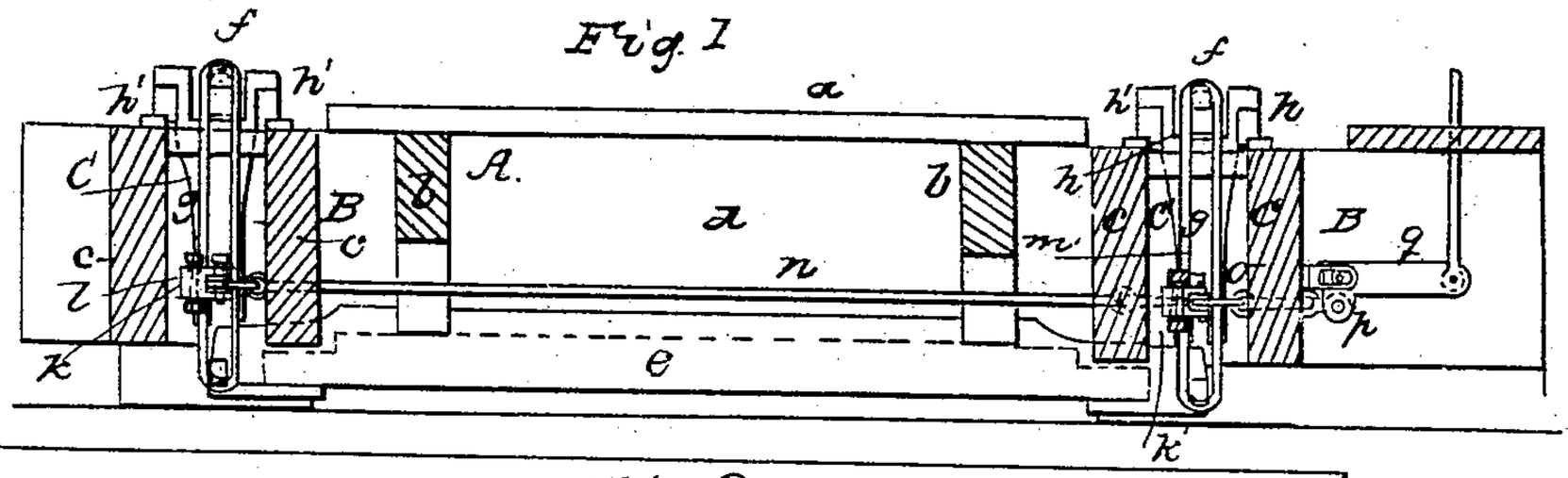


Fig. 2

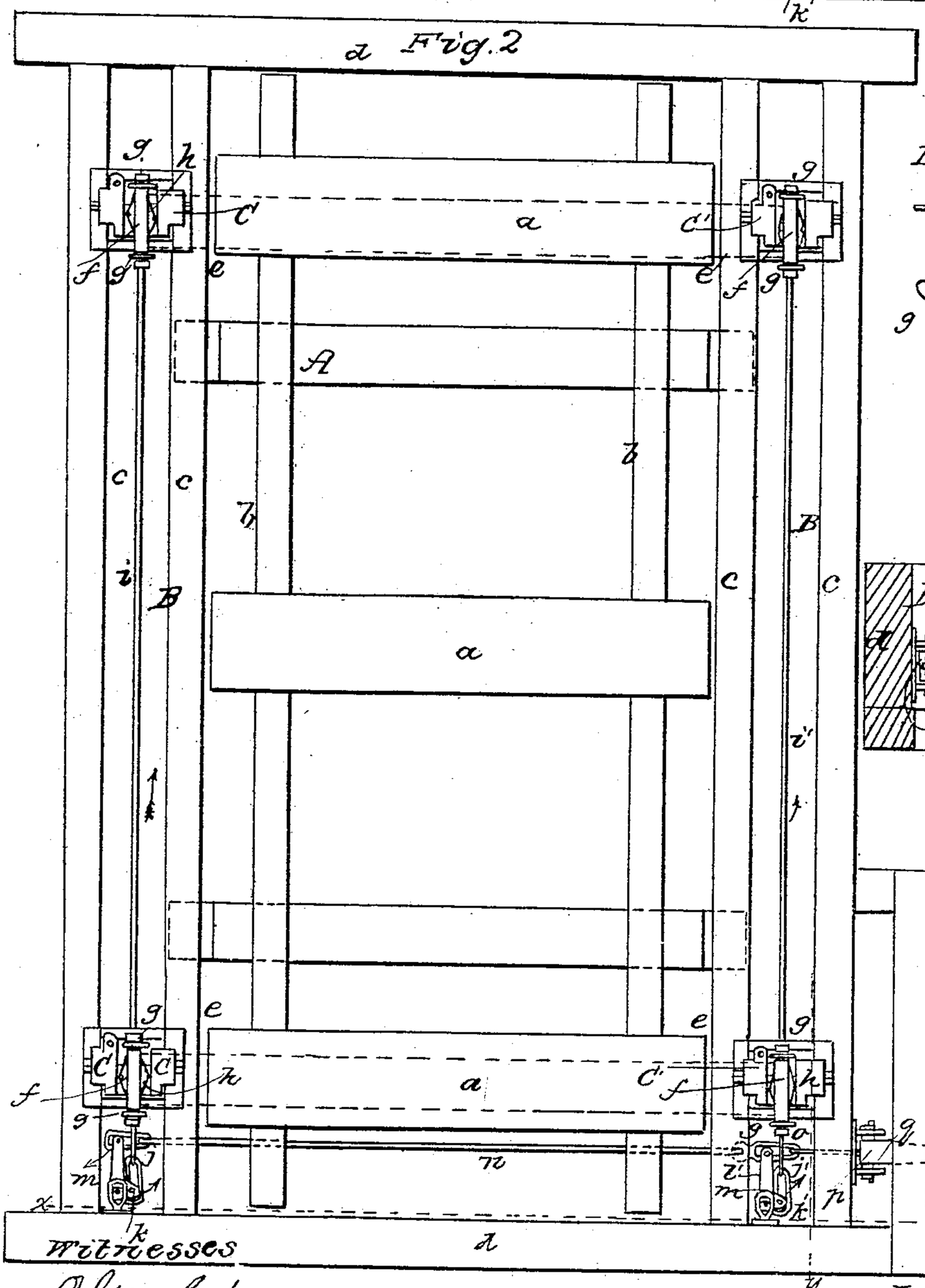


Fig. 4

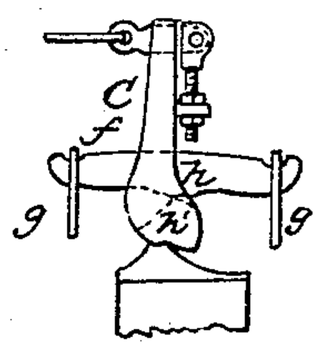
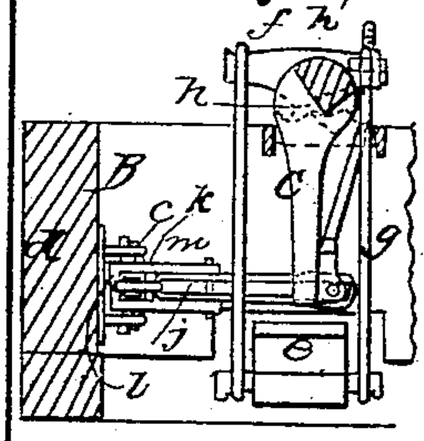


Fig. 3



Witnesses

Alexander
Timothy Shinn

Inventor

Ebenezer Sampson

UNITED STATES PATENT OFFICE.

ELNATHAN SAMPSON, OF WATERFORD JUNCTION, ASSIGNOR TO THE SAMP SON & TIBBITS SCALE COMPANY, OF GREEN ISLAND, N. Y.

IMPROVEMENT IN PLATFORM-SCALES.

Specification forming part of Letters Patent No. **37,259**, dated December 23, 1862.

To all whom it may concern:

Be it known that I, ELNATHAN SAMPSON, of Waterford Junction, in the county of Saratoga and State of New York, have invented a new and useful Improvement in Platform-Scales; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a transverse vertical section of my invention, the plane of section being indicated by the line *x x*, Fig 2. Fig. 2 is a plan or top view of the same. Fig. 3 is a longitudinal vertical section of a portion of the same in a larger scale than the previous figures, the plane of section being indicated by the line *y y*, Fig. 2, in its application to a railroad-scale; Fig. 4 shows its application to a weigh-lock.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is an improvement on that class of scales for which Letters Patent were granted to me May 24, 1859; and the invention consists in the employment of bell-crank levers, in combination with and connected to each other and to double-knife-edged vertical or pendent levers and to a graduated scale-beam in such a manner that by the action of said bell-crank levers the oscillating motion of the vertical or pendent levers is transmitted to the scale-beam perfectly correct, and by means which are cheap and easily put up, and which, when put up, are durable, not liable to get out of order, and work with as little friction as possible, either up or down, rendering these scales equally applicable for weighing railroad-cars, &c., and also for weigh-locks.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation with reference to the drawings.

The platform A of this scale is arranged in a well below the railroad-track when to be used for a railroad-scale, or at the bottom of a canal-lock when to be used for weighing canal-boats, and it is constructed of two or more cross-bars or sleepers, *a*, which support the rails, and which are supported by two longitudinal beams, *b*. The platform A is inclosed by a frame-work, B, consisting of two longitudinal timbers, *c*, which are connected by suitable cross-bars, *d*, and it is supported by cross-bars *e*, which are suspended from the ends of yokes *f* by means of links *g*. The yokes *f* are notched exactly in the middle of their length, and they rest on knife-edges *h*, formed either on the upper or on the lower end of oscillating pendent levers C C′. These pendants rest by means of knife-edges *h′* on the longitudinal frame-timbers *c*, being supported in such a manner that they swing or oscillate freely on the same. The knife-edges *h*, which are situated between the knife-edges *h′*, are not in line with the latter, as clearly shown in Fig. 3 of the drawings, so that a strain or pressure exerted on the edges *h* causes the pendants C C′ to swing in the direction of the arrow marked thereon in said figure.

The pendent levers C on one side of the frame-work B connect by means of rods *i* and links *j* with the short arm *k* of a bell-crank lever, *k l*, and the pendent levers C′ by means of rods *i′* and links *j′* with the short arm *k′* of a bell-crank lever, *k′ l′*, as clearly shown in Fig. 2 of the drawings. These bell-crank levers have their fulcra on pivots or knife-edge bearings in boxes *m m′*, which are firmly secured to one of the cross-bars *d* of the frame-work B, and their long arms *l l′* connect with each other by a rod, *n*, and a link or rod, *o*, forms a connection between said arms and the short arm *p* of a bell-crank lever, *p q*, the long arm of which connects with the graduated scale-beam.

The scale-beam is so loaded that when no weight is on the platform the latter is exactly balanced, and if a car or some other heavy body is brought to bear on the platform the action on the oscillating pendent levers is such that they swing and exert a strain in the direction of the arrows marked on the connecting rods in Fig. 2, thereby causing the bell-crank levers *k l k′ l′* to turn in the direction of the arrows marked on them in the same figure, and to exert a strain on the bell-crank lever *p q* and on the scale-beam in such a direction that the latter rises, and that it takes a certain weight suspended from the scale beam to balance the platform with the load on. The weight of the car or other heavy article on the platform can thus be ascertained.

If my present invention is to be applied to a weigh-lock, the pendent levers C are turned

upside down, as shown in Fig. 4, and the platform is suspended from yokes similar to those previously described. By these means the connection between the pendent levers and the scale-beam is thrown entirely above the platform, and by a suitable number of bell-cranks and connecting-rods the pendent levers on one side of the platform are brought in contact with those on the other side, this connection being effected at such a height above or below the lock that the same will not interfere with the passing vessels.

By this invention the construction of my scales is considerably facilitated. The platform is suspended from the pendent levers so that the knife-edge bearings are not liable to be injured by its motions, and all the connections of the pendent levers are effected from their center in such a manner that the strain is equalized, and the tendency of crowding said pendent levers on one side is avoided.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The employment or use of bell-crank levers *k l k′ l′ p q*, connected by rods or their equivalents, in combination with the oscillating vertical or pendent levers C C′, from which the platform A is suspended, all constructed, arranged, and operating substantially in the manner and for the purpose herein shown and described.

ELNATHAN SAMPSON.

Witnesses:

R. GAWLEY,

TIMOTHY SHINE.