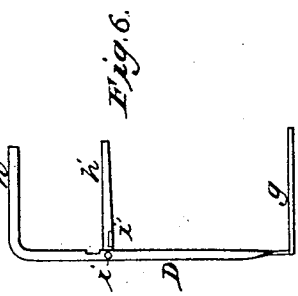
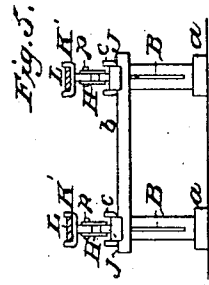
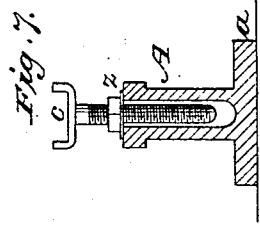
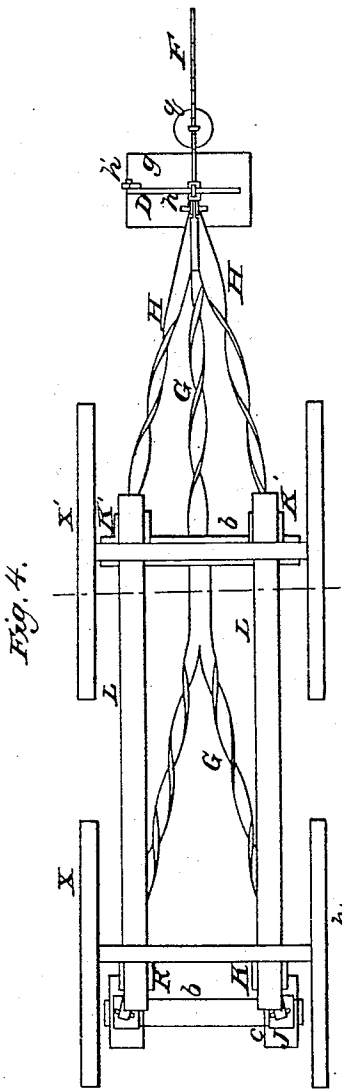


H. K. BUGBEE.

Platform Scales.

No. 82,204.

Patented Sept. 15, 1868.



WITNESSES
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H. K. BUGBEE, OF WILLIAMSTOWN, NEW JERSEY.

Letters Patent No. 82,204, dated September 15, 1868.

IMPROVEMENT IN PORTABLE PLATFORM-SCALES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, H. K. BUGBEE, of Williamstown, Camden county, New Jersey, have invented an Improved Weighing-Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of weighing-apparatus constructed in the peculiar manner fully described hereafter, so that it can be readily arranged for weighing loaded wagons or cattle, can be easily taken apart and conveniently packed for transportation, and can be speedily erected on solid ground, or on paved yards, or on floors, without any preparatory foundation, the apparatus being at the same time light and economical.

In order to enable others familiar with machinery of this class to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1, Drawing No. 1, is a side elevation of my improved scale as it appears when used for weighing hay.

Figure 2, the same when in use as a cattle-scale.

Figure 3, an enlarged sectional view of a portion of fig. 1.

Figure 4, Drawing No. 2, a plan view.

Figure 5, a transverse sectional view on the line 1-2, fig. 4

Figure 6, a detached view of part of the scale; and

Figure 7, a modification of part of my invention.

Similar letters refer to similar parts throughout the several views.

Two hollow standards A A, (figs. 1, 3, and 4,) each having a base, *a*, which rests upon the surface of the ground, are connected together at the top by a cross-piece, *b*, and in each standard is arranged to slide vertically a rack, B, having at its upper end a plate, *c*, the opposite ends of which are turned upwards.

Either of the bars B may be raised by means of a lever, *d*, inserted through an opening, *f*, in the side of the standard, the rack being maintained in the position to which it has been raised by a stop, *f'*, as shown in fig. 3.

At a suitable distance from the standards A are similar standards A', (figs. 1 and 5,) which also rest upon the surface of the ground, are connected together by a cross-piece, and are provided with racks B.

In fig. 6 is represented a frame, D, secured to or forming a part of a suitable base-plate, *g*, and having a fixed arm, *h*, and a movable arm, *h'*, the latter being hinged to the frame by a pin, *i*, and maintained in either a horizontal or vertical position by a lug, *i'*.

This frame is placed at a suitable distance from the standards A', and is intended as a support for the graduated scale-beam F, fig. 1, which is provided on each side with the usual knife-edge bearings *j*, by means of which it is hung to a clevis, *k*, attached to the arm *h* of the frame; and to similar knife-edge bearings *j* on the scale-beam is suspended a clevis, *l*, to which are hung the outer arms of two levers, G and H.

The forked arms of the lever G, (figs. 1 and 4,) rest upon knife-edge bearings *m* on plates J, which are laid upon the plates *c* of the standards A. The ends of the plates J, as shown in fig. 2, are bent downwards, so as to prevent them from moving longitudinally upon the plates *c*, while the bent ends of the latter as effectually prevent the plates J from moving laterally.

The inner end of the shorter lever H is also forked, and has its fulcrum upon knife-edge bearing of plates J, which are laid upon the plates *c* of the standards A'.

Close to the bearings *m* of the lever G, say at one-twentieth of the distance between them and the clevis *l*, rest knife-edged bearings *p* of plates K, and upon the shorter lever H; at a corresponding distance between its fulcrum and the clevis *l*, rest similar bearings of plates K'; the plates K and K' serving as supports for strips or bars L, upon which the material to be weighed rests.

The apparatus above described, resting upon the standards A and A', is to be used for weighing hay when loaded upon a wagon, the front and hind axles *x* and *x'* of which are shown in red lines, figs. 1 and 4, the standards A' being the most elevated, so as to correspond to the height of the hind axle of the wagon.

The wagon, when first placed over the apparatus, rests upon the surface of the ground, but by means of the lever *d*, (fig. 3,) the sliding bars *B* of the standards are raised until each of the wheels has been lifted clear of the ground. The whole weight of the wagon, as well as the load upon it, then rests on the bars *L*, as shown in figs. 1 and 4.

The weight also bears upon and depresses the levers *G* and *H*, which, through the clevis *l*, acts directly upon the graduated scale-beam *F*, the latter being provided with the usual sliding weight *y*, by means of which the weight of the wagon and its load are accurately determined.

When the scale is to be used for weighing cattle, the standards *A* and *A'* are removed, and a platform, *M*, is laid upon the bars *L*, the scale being consequently lower than that described above, and resting upon the plates *J*, as shown in fig. 2. It is necessary, after thus lowering the levers, that the graduated beam *F* and its appliances should also be lowered, which may readily be done by hanging the clevis *k* to the lower movable arm *h'* of the frame *D*.

After thus arranging the apparatus, the cattle are driven up an inclined platform *Y*, (shown in red lines, fig. 2,) on to the platform *M*, and weighed, and if desired, a railing may be placed around the platform *M*, in order to confine the cattle to the same.

The modification of my invention, shown in fig. 7, is an enlarged view of one of the standards, in which a screw-rod, instead of the rack *B*, is employed. The plate *c* is secured to the upper end of the rod, which can be raised or lowered to any required extent, by means of a nut, *z*, which rests upon the top of the standard.

If it be found in practice that the scale-beam *F* has a tendency to move laterally, it may be held in a proper position, and such motion prevented, by a supplementary upright secured to the base, *g*, or by other suitable devices.

The parts composing the above scale are all detachable from each other, so that it can be readily taken apart and packed in the most convenient form for transportation. The scale is very light and economical, when compared with the stationary platform-scales now in common use, and although I have described it as adapted for weighing hay and cattle only, it will be evident that it may be applied to any of the purposes for which platform-scales are used.

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

1. The levers *G* and *H*, having their fulcra on plates *J*, which rest upon adjustable standards *A* and *A'*, or directly upon the surface of the ground or floor, in combination with a graduated-scale beam, and the within-described appliances, (or their equivalents,) connected therewith, all substantially as and for the purpose set forth.
2. In combination with the above, I claim the bars *L* or platform *M*, for the purpose specified.
3. The frame *D*, with its fixed and movable arms *h* and *h'*, for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

H. K. BUGBEE.

Witnesses:

JOHN WHITE,
C. B. PRICE.