

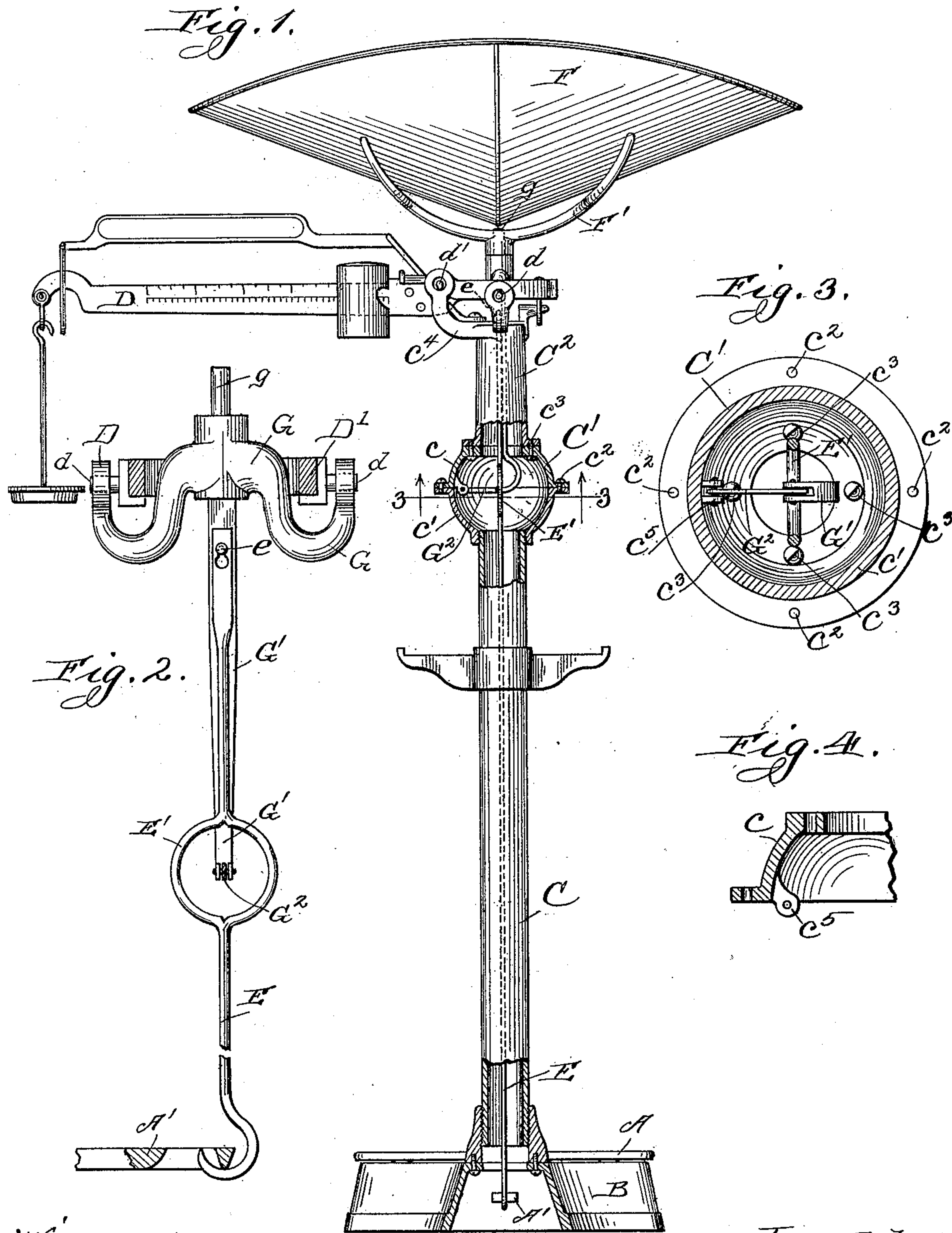
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Patented Apr. 10, 1900.

J. B. FREM.
WEIGHING SCALE.

(Application filed May 15, 1899.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN B. FREM, OF CHICAGO, ILLINOIS.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 647,297, dated April 10, 1900.

Application filed May 15, 1899. Serial No. 716,877. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. FREM, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Weighing-Scales, of which the following is a specification.

This invention relates to weighing-scales, and has for its object to produce an improved
10 scale, which is designed to rest on the floor, but with its weigh-beam supported upon a high pillar, so as to be conveniently near the eyes of the person using the scale, may be provided with a scoop at the inner end of the weigh-
15 beam in the same manner as an ordinary counter or table scale.

The invention consists in the matters herein set forth, and particularly pointed out in the appended claims, when read in connection with the accompanying drawings, in
20 which—

Figure 1 is a partially-sectional elevation of a platform-scale provided with my improvements. Fig. 2 is a fragmentary detail of the
25 steelyard-rod and check-rod. Fig. 3 is a sectional detail taken on line 3 3 of Fig. 1. Fig. 4 is a fragmentary sectional detail showing the position of the lugs to which the check-rod is pivoted.

30 In said drawings, A designates the weighing-platform, which is mounted in the base B, that is normally designed to rest upon the floor.

C designates a high pillar or column, at the
35 top of which the weigh-beam D is pivotally supported and through the interior of which runs the steelyard-rod E, which connects the weigh-beam with the platform-lever A', the weigh-beam being in this manner supported
40 at such a height as to be conveniently near the eyes of a person standing to use the scale. In the present improvement also the scale is provided with a scoop F, which is mounted in a frame F' at the inner end of the weigh-
45 beam D and directly above the pivotal connection between said beam and the steelyard-rod E. This connection is formed by a cross-head G, the outer ends of which engage the knife-edges d of the weigh-beam and upon
50 the center of which the supporting-frame F' of the scoop is supported in any suitable manner, as by being apertured to set down over

an upwardly-projecting stem g of said cross-head. To prevent the cross-head from being deflected or swung out of plumb by the weight
55 of the scoop and the materials which may be placed therein to be weighed, said cross-head is also provided with a rigidly-attached depending stem G', the lower end of which is connected with the pillar C by a check-rod G²,
60 that acts to maintain the cross-head in a substantially-vertical position. The steelyard-rod E is connected with the cross-head in any suitable manner, as by a detachable stud-and-slot connection e to the stem G' at a suitable
65 point below the cross-head and extends downward from this point at one side of said lower cross-head stem G' to engage the platform-lever A', as described.

The connection thus far described is sub-
70 stantially similar to that employed in mounting a scoop on the ordinary counter or table scale of this character, but differs in this respect that the pivotal attachment of the lower end of the cross-head stem G' with the pillar
75 occurs in the counter-scale at the foot of the pillar and below the connection of the steelyard-rod with the platform-lever, the steelyard-rod being extended downward through the entire length of the pillar to permit the at-
80 tachment at this point. Such a construction is, however, found impracticable in high-pillar platform-scales of the character under consideration, since, unless the steelyard-rod and
85 lower cross-head stem are made unduly heavy and the pillar or column of excessive diameter, the weight of the scoop and contents is liable to produce a deflection in the rods, which by reason of their great length may be sufficient to interfere with the accuracy of the apparatus,
90 either by the misplaced direction of strain or by rubbing of the rods on the interior of the pillar. To avoid these difficulties, the pillar C in the present improvement is made in sections, it being herein shown as provided near
95 its upper end with an inserted enlarged section C', within which the connection of the lower end of the stem G² with the pillar is located. Conveniently the lower portion of said pillar may be made, as herein shown, of a piece of
100 pipe or tubing, to which the removable section C' is connected by ordinary screw-joint, said section C' being itself made of cast-iron, preferably in upper and lower halves c c', de-

tachably connected by screws c^2 , and the upper section C^2 of the pillar being also made of cast-iron, secured at its lower end to the upper half c of the section C' by screws c^3 and provided at its upper end with integral bracket-arms c^4 , which support the knife-edges d' of the weigh-beam head D' . Lugs c^5 are shown as cast integral with the upper half c of the enlarged or globular section C' and as projecting inward to afford a connecting-point for the check-rod G^2 , said lugs being furthermore shown as projecting downwardly below the lower face of said upper half of the section C' , as shown in Fig. 4, to enable them to be drilled without difficulty.

The pivotal connection between the stem G' and the check-rod G^2 should be located in the axis of the steelyard-rod, which latter is arranged to hang as nearly as possible in the exact vertical plane of the knife-edges d of the steelyard-arm, and to permit of this construction said steelyard-rod is shown as looped at E' , opposite the lower end of the stem G' , to permit the latter to be bent in, as shown in Fig. 3, to pivotally engage said check-rod G^2 in the axis of the steelyard-rod. The same result may, however, be accomplished by omitting the loop in the steelyard-rod and bifurcating the lower end of the stem and check-rod to afford pivotal connection at each side of the steelyard-rod, but in the same vertical plane therewith, and it will be understood also that approximately-accurate results may be obtained by locating the lugs c^5 on the same side of the steelyard-rod as the stem and extending the check-rod away from instead of through or past said steelyard-rod. It will also be understood that various changes in other respects may be made in the details of the construction shown without involving any departure from the broad invention claimed.

The improvements thus described render practicable the construction of a high-pillar platform-scale which is unchanged in any essential from previous scales of this character, except in being additionally provided with the weighing-scoop, which is found of such value in the ordinary counter-scale, the sectional construction of the pillar or column enabling the short and rigid lower cross-head stem to be retained and the steelyard-rod to remain unaltered, except by the provision of the open loop at one point, the link connections between said stem and pillar being at the same time readily accessible for assembling or repair. It will be noted also that by my construction the upper end of the steelyard is connected to depending stem G' , whereby there will be but a single central connection to the yoke or cross-head and but a single point of connection to the weigh-beam—namely, at the knife-edges d —resulting in simplicity in construction and nicety in balancing the parts.

I claim as my invention—

1. A combined scoop and platform-scale,

comprising a base carrying a weighing-platform, a hollow pillar extending up from said platform and provided with a hollow enlargement or casing at a point between its ends, said pillar being separable into two sections, the line of separation running transversely through the casing, a weigh-beam pivotally mounted at the top of the pillar, a steelyard-rod extending through the pillar and the inserted casing and connected at its lower end to the platform-lever, a device connecting the upper end of this rod to the weigh-beam, a scoop supported on this device, a stem, as G' , depending from said device and terminating within said enlargement or casing, and a link pivotally connecting the lower end of this stem to the interior of the casing, for the purposes set forth.

2. A scale, comprising a base provided with a weighing-platform, a pillar or column extending upward from said base and divided transversely into two sections, a weigh-beam pivotally mounted at the top of the column, a steelyard-rod extending down through the column and connecting with the platform-lever, a cross-head pivotally connected to the weigh-beam, a scoop mounted on the cross-head, a stem depending from said cross-head and connected to upper end of steelyard-rod, and a check-rod pivotally connecting the lower end of the stem with the pillar at the joint between the sections of the latter.

3. In a scale of the class described, the combination with the scale base and platform, weigh-beam and steelyard-rod, the cross-head pivotally supported on weigh-beam, a scoop supported on cross-head, cross-head stem depending centrally from the cross-head and connected to upper end of the steelyard, of a pillar supporting the weigh-beam from the scale-base, and a check-rod pivotally connecting said stem with the pillar.

4. The combination with the scale base and platform, the weigh-beam, and a steelyard-rod connecting the weigh-beam and platform-lever and provided between its ends with an open loop, the cross-head scoop and depending cross-head stem, of a pillar supporting the weigh-beam from the scale-base and a check-rod pivotally connecting the lower end of the stem with the pillar at a distance above the base and extending freely through the loop in the steelyard-rod.

5. The combination with the scale base and platform, weigh-beam and steelyard-rod, the cross-head, scoop and depending cross-head stem, of a pillar supporting the weigh-beam from the scale-base and inclosing the steelyard and cross-head stem, an enlarged removable section located in the pillar opposite the lower end of the stem, and a check-rod connecting said stem with said removable section.

6. The combination with the scale base and platform, weigh-beam and steelyard-rod, the cross-head, scoop and depending cross-head stem, of a high pillar supporting the weigh-

beam from the scale-base and inclosing the
steelyard-rod and cross-head stem, a remov-
able section inserted in the pillar between its
upper and lower end sections and made in
5 two detachably-connected portions, lugs on
the upper portion depending into the lower
portion below the plane of their meeting
faces, and a check-rod pivotally connecting
the lower end of the stem with said lugs.

In testimony that I claim the foregoing as 10
my invention I affix my signature, in presence
of two subscribing witnesses, this 10th day of
May, A. D. 1899.

JOHN B. FREM.

Witnesses:

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ALBERT H. GRAVES.