

(No Model.)

N. DU BRUL.

WEIGHING SCALE.

No. 299,761.

Patented June 3, 1884.

Fig. 1.

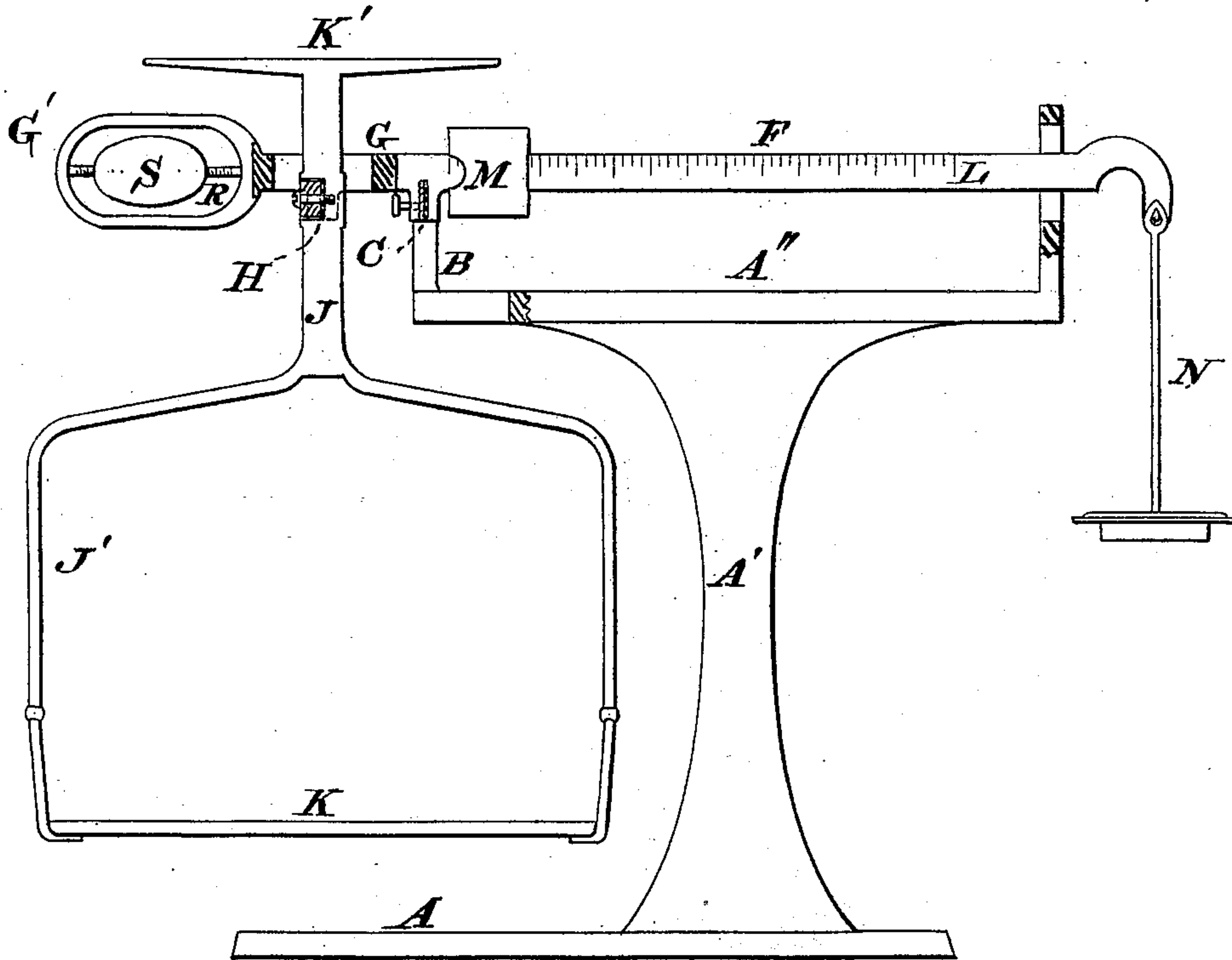
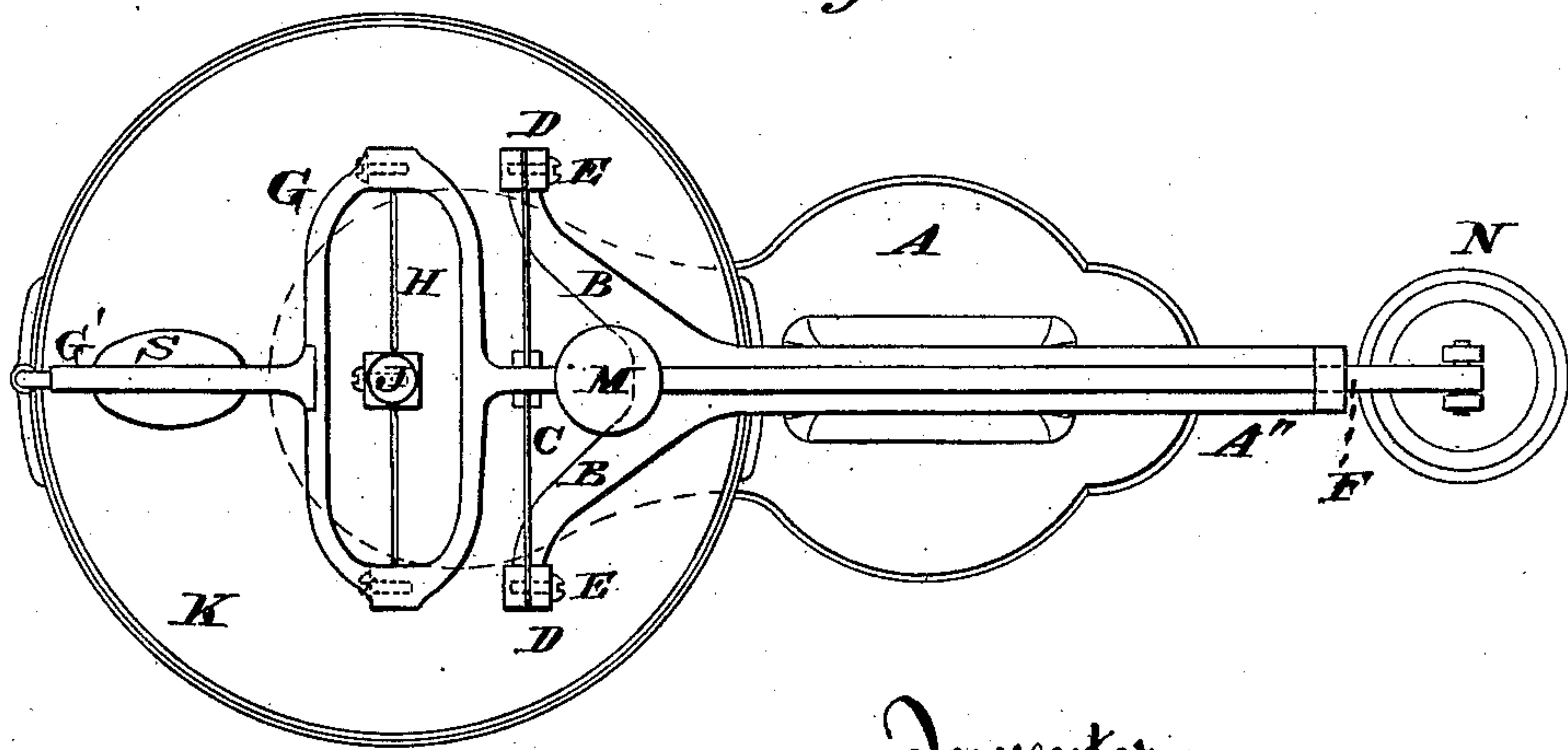


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

NAPOLEON DU BRUL, OF CINCINNATI, OHIO.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 299,761, dated June 3, 1884.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, NAPOLEON DU BRUL, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful
5 Improvement in Weighing-Scales, of which the following is a specification.

My invention relates to improvements in those balances or weighing-scales in which the torsional elasticity of metal or analogous material is employed to control the oscillations of
10 the beam.

My improvements have for their object the production, at a moderate expense, of a torsion-balance of great simplicity, sensitiveness,
15 and durability.

In another application, No. 118,691, I have shown, described, and claimed, and applied to one form of scale a flat torsion strip, bar, or rod stretched horizontally and set up edgewise
20 to form a fulcrum strip, bar, or rod for a beam. In other applications, Nos. 118,692, 118,693, 118,694, and 118,979, I have shown and described the employment of such strip, bar, or rod with other forms of scales. In the present form of my invention the beam, near one
25 end thereof, carries a torsion strip, bar, or rod from whose mid-length hangs a pendent weighing pan or platform having a supplemental pan on the top thereof, preferably, and
30 its other end carries a sliding weight and hanger for additional weights.

In the accompanying drawings, Figure 1 is a partly sectional elevation. Fig. 2 is a plan.

A is the base, A' the standard, and A'' the
35 T-head, of a cast-metal support or stand. The T-head A'' at one end bifurcates into two lugs, B, to each of which is fastened by clamping-block D and screw E one end of a stretched flat strip, bar, or rod, C, of steel or equivalent elastic material. The lugs B are the fulcrum-lugs, and the strip, bar, or rod C the
40 fulcrum strip, bar, or rod. To the fulcrum strip, bar, or rod, at its mid-length, there is attached, by similar clamping-block and screw to those already described, a scale-beam, F,
45 which extends on both sides of the fulcrum strip, bar, or rod. On one side of the fulcrum strip, bar, or rod the beam F takes the form of a loop, G, to which are properly attached the
50 ends of a torsion strip, bar, or rod, H, similar to the fulcrum strip, bar, or rod. Similarly attached to the mid-length of the end torsion strip, bar, or rod is the stem J of a suspended stirrup, J', which carries a pendent pan or
55 platform, K. The stem J extends above the

supporting strip, bar, or rod H, and is surmounted by a small supplementary pan, K'. The beam on this side of the fulcrum terminates in a second loop, G', which is crossed
60 by a screw-threaded rod, R, that carries an adjustable auxiliary weight, S, for trimming or leveling either a loaded or unloaded scale. The beam on the other side of the fulcrum is marked with a scale, L, and carries a slidable
65 weight, M. Suspended from the extremity of the same portion of the beam F is a hanger, N, to receive additional weights when necessary. It is apparent that in this construction
70 of scale there are only two pivotal torsion strips, bars, or rods, and the weight of the suspended pan K maintains both it and the supplementary pan K' to proper horizontality without any guides in every position of the beam. The weight of the pan K and its hanger in
75 the described combination with the torsion strip, bar, or rod H not only proves a very sensitive arrangement, but enables the easy carrying of the small supplementary pan K' above the pivotal point for light articles, and
80 at a trivial expense.

In a useful modification of this form—applicable, for instance, to weighing letters and other light articles—the part of the pan-support below the torsion strip, bar, or rod may
85 take the form of a pendant of sufficient weight to support and maintain the pan K' above the said strip, bar, or rod in horizontal position during its oscillations, independently of pan K, which may be omitted.

I claim as new and of my invention— 90

1. In a weighing-scale, the combination of a beam having its fulcrum-support acting torsionally, a torsion strip, bar, or rod fastened rigidly to the beam, and a platform secured
95 directly and rigidly to and suspended from the torsion strip, bar, or rod, as set forth.

2. In a weighing-scale, the combination of a beam having its fulcrum-support acting torsionally, a torsion strip, bar, or rod secured by its ends rigidly to the beam, and a platform secured directly and rigidly to and
100 suspended from the torsion strip, bar, or rod, and having a light supplementary pan above the beam, as set forth.

In testimony of which invention I hereunto
105 set my hand.

NAPOLEON DU BRUL.

Attest:

GEO. H. KNIGHT,
SAML. S. CARPENTER.