(No Model.)

N. DU BRUL.

PLATFORM SCALE.

No. 299,762. Patented June 3, 1884.

FIG. I.

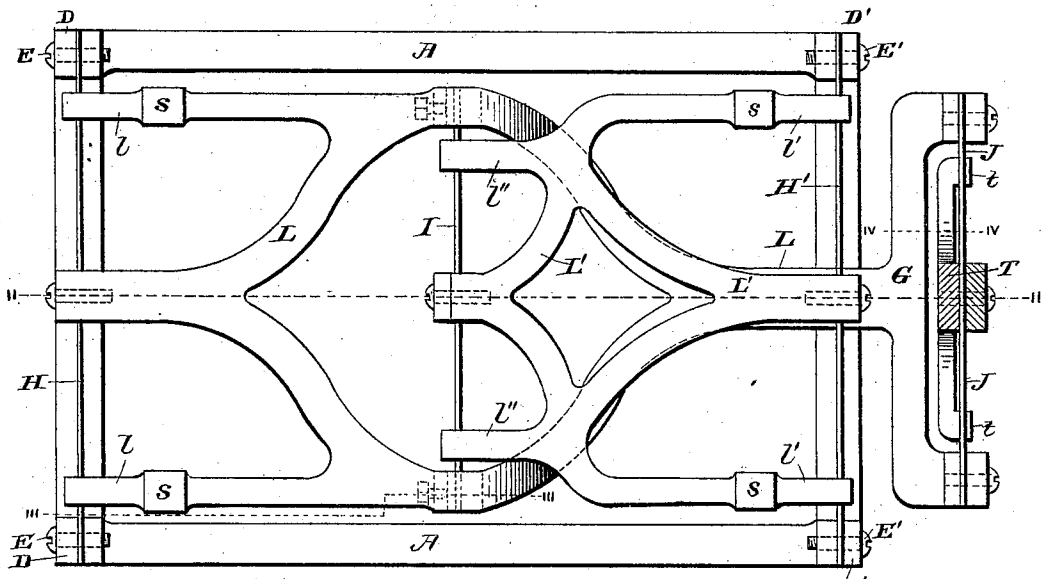


FIG. III.

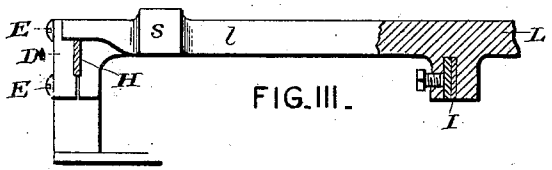


FIG. IV.

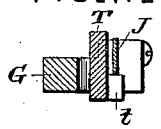
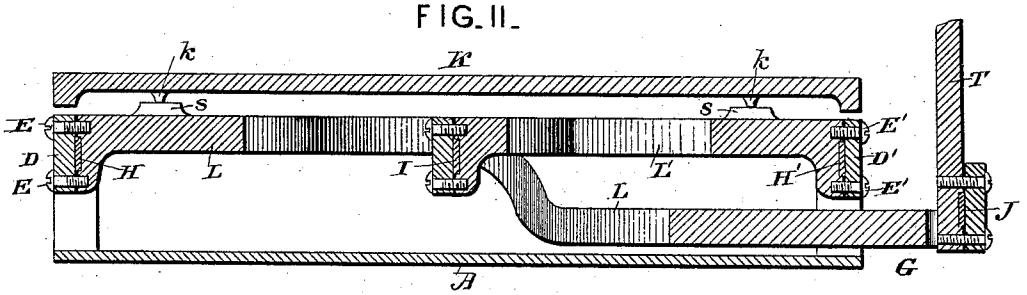


FIG. II.



ATTEST.

Geo. P. Smallwood.

J. Henry Kaiser.

INVENTOR.

Napoleon Du Brul.

By Knight Bros.

attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

NAPOLEON DU BRUL, OF CINCINNATI, OHIO.

PLATFORM-SCALE.

SPECIFICATION forming part of Letters Patent No. 299,762, dated June 3, 1884.

Application filed January 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, NAPOLEON DU BRUL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Platform-Scales, of which the following is a specification.

The subject of my invention is a platform-scale in which the platform rests, by knife-edges or other means, on primary and secondary platform-levers, which are fulcrumed in a bed or frame and to each other through the medium of flat torsion bars or plates set edge up, so as to possess strength and rigidity to resist vertical strains, while free to act torsionally in their service as fulcrums to the levers. To render this torsional action the more free the primary torsion-bars are clamped at their extremities to the bed or frame, and at their centers to the levers, of which they form the fulcrums, and the secondary torsion-bar, which connects the primary and secondary platform-levers together, is clamped at its extremities to one of the said levers and at its center to the other, as hereinafter described. To stay the platform-levers against oscillation, and relieve the central parts of the torsion bars or plates of a part of the load and protect them against vertical bending, the platform-levers are further provided with lugs or projections resting on the torsion-bars near their fixed attachments, and the secondary platform-lever has similar lugs or projections resting on the connecting torsion-bar near the extremities where it is clamped to the primary platform-lever. The free extremity of the primary platform-lever is formed with a T-head, to the arms of which are clamped the extremities of a torsion-bar clamped at its center to a beam-rod, by which the load is communicated to the beam; and the lower end of the said beam-rod is itself formed with a T-head, or with arms engaging beneath the connecting torsion-bar near its ends, to stay the parts against deflection or oscillation.

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 edge up, to form a fulcrum strip, bar, or rod for a beam. In other applications numbered 118,692, 118,693, 118,694, and 118,695, I have shown and described the employment of such strip, bar, or rod with other forms of scales.

In the accompanying drawings, Figure I is a plan of the bed of the scale and the platform-levers fulcrumed therein, the platform being removed. Fig. II is a vertical longitudinal section of the same on the line II II, Fig. I, with the platform in position. Fig. III is a detail vertical longitudinal section through the platform-lever connections on the line III III, Fig. I. Fig. IV is a detail vertical section of the platform-lever and beam-rod connection on the line IV IV, Fig. I.

The stationary bed is shown at A.

L represents the main platform-lever, clamped at its heel or fixed fulcrum-point to the center of a flat torsion-bar, H, which is set edge up or in a vertical plane, and secured at its ends to the end of the bed or frame A by clamp-plates D and screws E, or other means. The secondary platform-lever L′ is clamped in like manner to the center of a flat torsion-bar, H′, the ends of which are secured to the opposite end of the bed or frame A by the clamp-plates D′ and screws E′, or other suitable means.

I represents a torsion-bar clamped at its extremities to the primary platform-lever L, and at its center to the secondary platform-lever L′, forming a connecting-fulcrum between the said levers.

l l′ represent lugs or arms projecting from the respective platform-levers L L′, and resting on the upper edges of the respective torsion-bars H H′, near the fixed ends thereof, to sustain a portion of the load of the platform-levers and prevent the bending of the torsion-bars or the oscillation of the platform. Similar lugs, *l″*, project from the secondary platform-lever L′, and rest on the central torsion-bar, I, near the attached ends thereof, so as to protect the said torsion-bar against bending.

The platform is shown at K, resting by knife-edges *k* on seats S, prepared therefor near the heels or fixed fulcrum-points of the primary and secondary platform-levers L L′. The respective bearing-points *k* being equidistant from the adjacent fulcrum-points H and H′, and the central connecting-fulcrum, I, being equidistant from the fixed fulcrum-points H and H′, a load on any part of the platform will have the same effect on the platform-levers, according to the well-known principle of plat-

form-scales. The free end G of the platform-lever L is formed with a T-head, to the extremities of which are securely clamped a flat torsion-bar, J, set edge up, as before described, and clamped by its center to the rod or bar T, by which the load is transmitted to the beam. The bar T is formed at its lower end with arms, the extremities of which have lugs *t* projecting underneath the torsion-bar J, near the end attachments thereof, so as to protect the torsion-bar against vertical bending and stay the parts against relative oscillation.

The connection between the beam-rod T and the weight-beam may be by means of a similar torsion-bar; or the weight-beam and its connections and supports may be of any usual construction. The beam is to be adapted for the customary pendent and sliding weights.

Some parts of my invention may be carried out by the use of torsion-bars of square or other form, instead of the flat torsion bars or plates here shown.

I claim as new and of my invention—

1. In a platform-scale, the combination of a bed or frame, platform-levers, and torsional fulcrum bars or plates rigidly attached at their ends to the bed or frame, and at their centers to the platform-levers.

2. In a platform-scale, the combination of a bed or frame, platform-levers, torsional fulcrum bars or plates rigidly attached by their ends to the bed or frame, and torsional fulcrum bar or plate firmly secured and connecting the platform-levers.

3. The combination of a bed or frame, torsional fulcrum bars or plates, and a lever having projections to rest on the torsional fulcrum bars or plates, as set forth.

4. The combination of a bed or frame having flat torsion bars or plates, edge up, and platform-levers, as set forth.

5. The combination of platform-levers, torsion bar or plate fixed at its ends to one of the levers and at its center to the other, to connect them, and lugs or projections resting on said torsion bar or plate, as set forth.

6. The combination of the main lever, the beam-rod, and a torsion bar or plate connecting the main lever and the beam-rod, as set forth.

7. The combination of the platform-lever, beam-rod, flat torsion bar or plate connecting the platform-lever and the beam-rod, and lugs or stays to prevent oscillation or bending of the torsion bar or plate, as set forth.

NAPOLEON DU BRUL.

Witnesses:
OCTAVIUS KNIGHT,
EDWARD STEER.