No. 667,410. Patented Feb. 5, 1901.

J. H. SWIHART & E. R. CROSS.

PLATFORM SCALE.

(Application filed May 12, 1897.)

(No Model.)

Fig. 1.

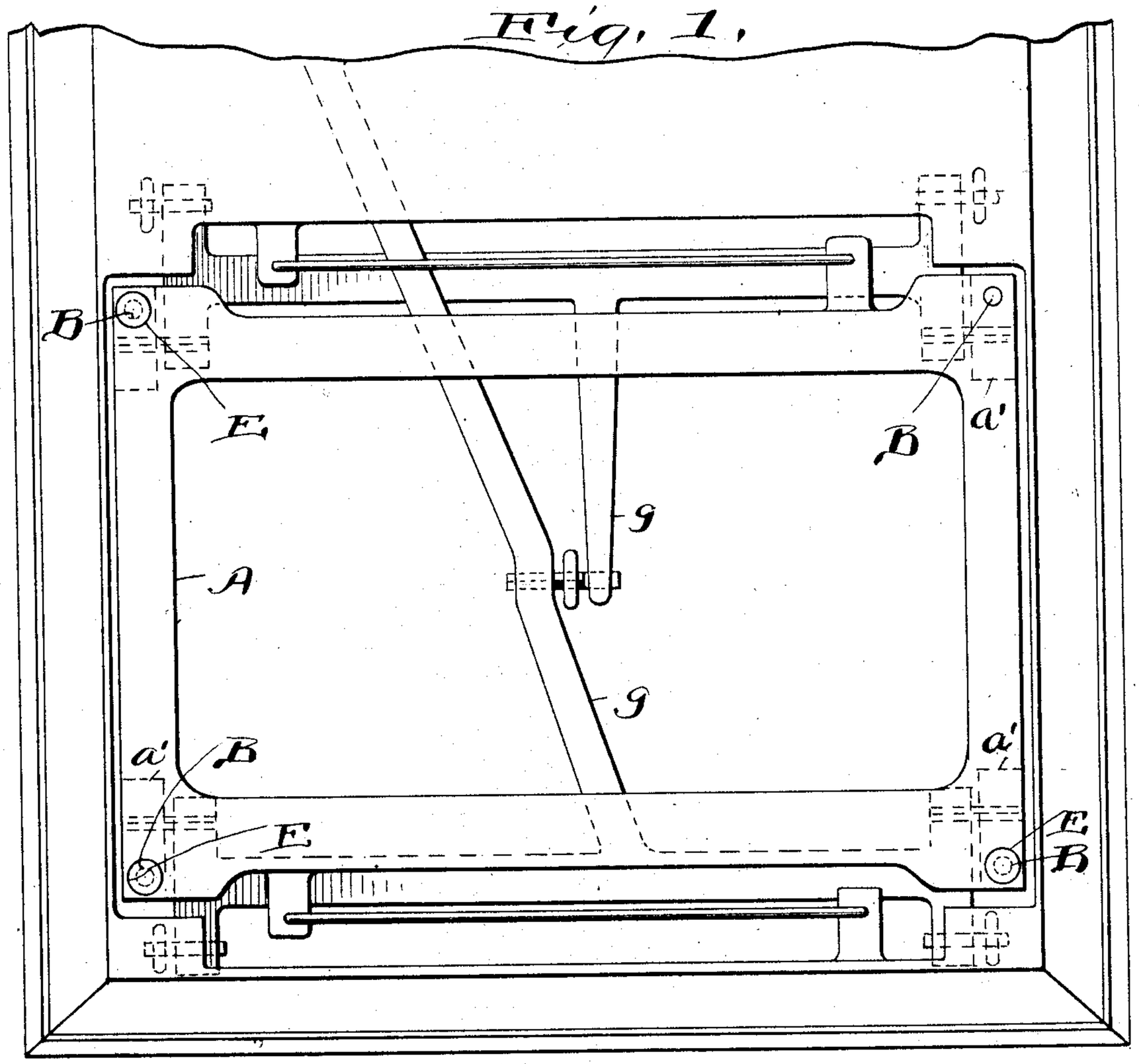


Fig. 2.

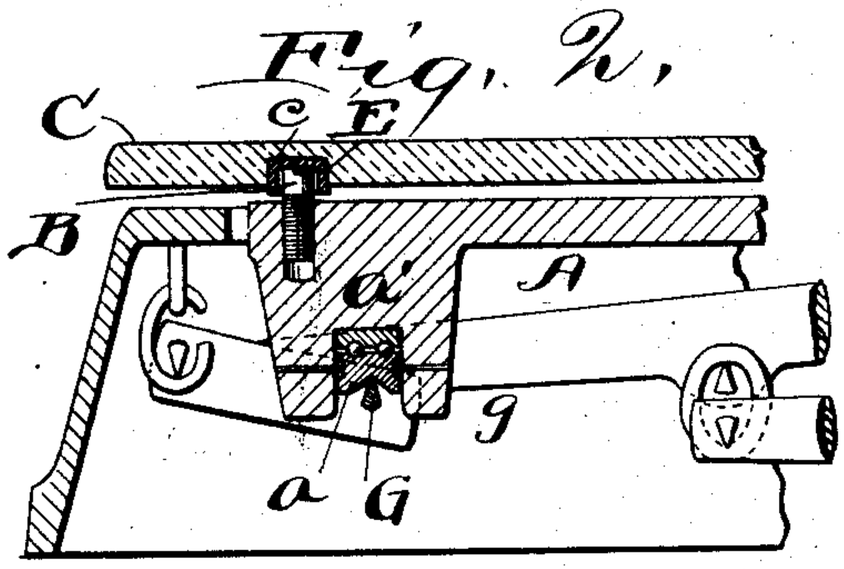
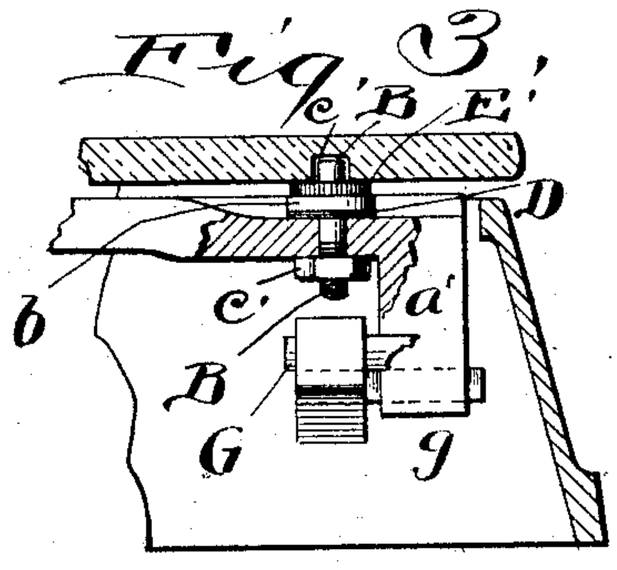


Fig. 3.



Witnesses.
E. B. Gilchrist
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Inventors,
John Henry Swihart
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By their Attorneys,
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UNITED STATES PATENT OFFICE.

JOHN HENRY SWIHART AND EDMUND R. CROSS, OF CLEVELAND, OHIO, ASSIGNORS TO THE NATIONAL COMPUTING SCALE COMPANY, OF SAME PLACE.

PLATFORM-SCALE.

SPECIFICATION forming part of Letters Patent No. 667,410, dated February 5, 1901.

Application filed May 12, 1897. Serial No. 636,131. (No model.)

To all whom it may concern:

Be it known that we, JOHN HENRY SWIHART and EDMUND R. CROSS, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Platform-Scales; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the manufacture of platform-scales it is customary to employ a subplatform which is supported upon knife-edges carried by the platform-levers and a platform which rests upon this subplatform. In an accurate and marketable scale the platform must rest squarely upon the subplatform, and it must also be prevented from moving horizontally relative thereto. Heretofore the contacting surfaces of the two platforms have been filed or ground down until they fitted each other so accurately that the platform can have no rocking motion, and the horizontal movement of the platform has been prevented by other means—viz., by vertical pins formed on the subplatform which enter corresponding holes in the platform.

One object of our invention is to provide simple and novel means for effecting both of these desirable results.

Another object is to provide a more or less yielding cushion between the platform and the subplatform for the purpose, primarily, of relieving the shock upon the knife-edges which support the subplatform when a weight is placed suddenly upon the platform.

The invention consists in the construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of a subplatform of a scale embodying our invention. Fig. 2 is a vertical section of the platform and subplatform and one of the adjustable leveling and retaining pins which are carried by the subplatform and upon which the platform rests, and Fig. 3 is a similar view of a modified construction.

A represents the subplatform, which may be merely a cast-iron frame. At the four corners are depending legs a', which carry bearing-blocks a, and these bearing-blocks rest upon knife-edge bearings G, which are carried by the platform-levers g.

B B represent vertical pins, which are connected to and carried by the subplatform. There should be, preferably, four of these pins, and they should be placed at the four corners of the subplatform and more or less nearly in line with and above the several bearing-blocks, and at least one of them should be vertically adjustable.

C represents the platform, which may be made of any suitable material. This platform rests upon the pins B. In the bottom of the platform are holes c, which are so placed that they will receive the pins B. The pins therefore support the platform, and because of their vertical adjustability they are the means to level the platform, and they likewise prevent its movement horizontally relative to the subplatform.

The construction of the pins whereby they are vertically adjustable may be varied to a considerable extent without departure from the invention—as, for example, in Fig. 2 the pins are threaded and they screw into holes in the subplatform. The platform is supported by resting upon the upper ends of said pins, which ends enter the holes c. In Fig. 3 the lower end of the pin is threaded and passes loosely through a hole in the subplatform, and a nut c' screws onto its lower end below the platform. Above the platform, but below its upper end, the pin is provided with an annular flange b. Between this flange and the subplatform may be placed one or more washers or shims D, whereby the flange is elevated more or less above the subplatform. When the nut is tightened, the pin becomes immovable relative to the subplatform. In this construction the upper ends of the pins enter the holes in the platform, but fit loosely therein and do not touch the ends of the holes, the platform being supported upon the flanges. As before stated, it is not necessary to have all of these leveling and retaining pins adjustable. If one of

said pins is adjustable, the platform may be made to sit squarely upon them all; but it may not be exactly horizontal. If three of said pins are made adjustable, a perfect horizontal adjustment of the platform may be made.

In the construction shown the adjustable pins are fastened to the subplatform; but the reversal of this arrangement is included in the invention. In either case the pins being above are supported by the subplatform, while the platform is supported by the pins.

The second part of the invention relates to the interposition of a yielding cushion between the platform and subplatform to relieve the shock upon the knife edges when a weight is thrown on the platform. This improvement is shown in several forms in the drawings. In Fig. 2 a rubber cap E embraces the leveling-pin and enters the hole in the platform, the platform resting directly upon this cap. In Fig. 3 a rubber washer E′ is interposed between the flange *b* and base, and the platform rests upon this washer. The cap and the washer both act as yielding cushions interposed between the platform and subplatform and effect the results stated. Although rubber cushions are shown and described, any other form of spring-cushion may be employed.

Having described our invention, we claim—

1. In a platform-scale, the combination of the platform-levers, a subplatform resting thereon, vertical pins secured to said subplatform, each having a horizontal flange above the subplatform—one of said pins being vertically adjustable—with a platform which is supported upon said flanges, and has holes into which the upper ends of the pins project loosely, substantially as described.

2. In a platform-scale, the combination of a subplatform having a plurality of vertical pins near its corners, at least one of said pins being constructed and combined with the subplatform as follows, said pin having between its ends and above the subplatform a horizontal flange, and having its lower end threaded, said lower end passing through the subplatform, a nut screwed onto the lower end of the pin below the subplatform, and one or more washers interposed between the subplatform and flange, with a platform supported upon the pins, and having holes into which the pins project, substantially as described.

3. In a platform-scale, the combination of a subplatform, a leveling-pin secured to said subplatform having a flange between its ends and above the subplatform, and a threaded lower end which passes through the subplatform, a nut screwed onto said lower end below the platform, and one or more washers between the flange and subplatform, with a platform, one corner of which rests upon said flange, and has a hole which loosely receives the upper end of said pin, substantially as described.

4. In a platform-scale, the combination of the platform-levers, a subplatform resting thereon having a plurality of vertical leveling-pins, a platform which is supported upon said pins, and yielding cushions interposed between the pins and platform, substantially as described.

5. In a platform-scale, the combination of the platform-levers, a subplatform resting thereon and a platform, a plurality of vertical leveling-pins which are secured to one of said parts and loosely enter holes in the other part, and yielding cushions interposed between the pins and that member to which the pins are not positively attached, substantially as described.

6. In a platform-scale, the combination of the platform-levers, a subplatform resting thereon and having a plurality of vertical leveling-pins, of which at least one is vertically adjustable, a platform which is supported upon said pins, and yielding cushions interposed between said pins and platform, substantially as described.

7. In a platform-scale, the combination of a subplatform having a plurality of vertical leveling-pins, of which at least one is vertically adjustable and is provided with a flange above the subplatform, a platform, and rubber cushions interposed between the platform and pins, the cushions associated with the adjustable pins being washers which rest upon the flanges thereof, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN HENRY SWIHART.
EDMUND R. CROSS.

Witnesses:
E. L. THURSTON,
ALBERT H. BATES.