

No. 811,980.

PATENTED FEB. 6, 1906.

O. C. WIESE.
SPRING SCALE.

APPLICATION FILED AUG. 2, 1905.

Fig. 1.

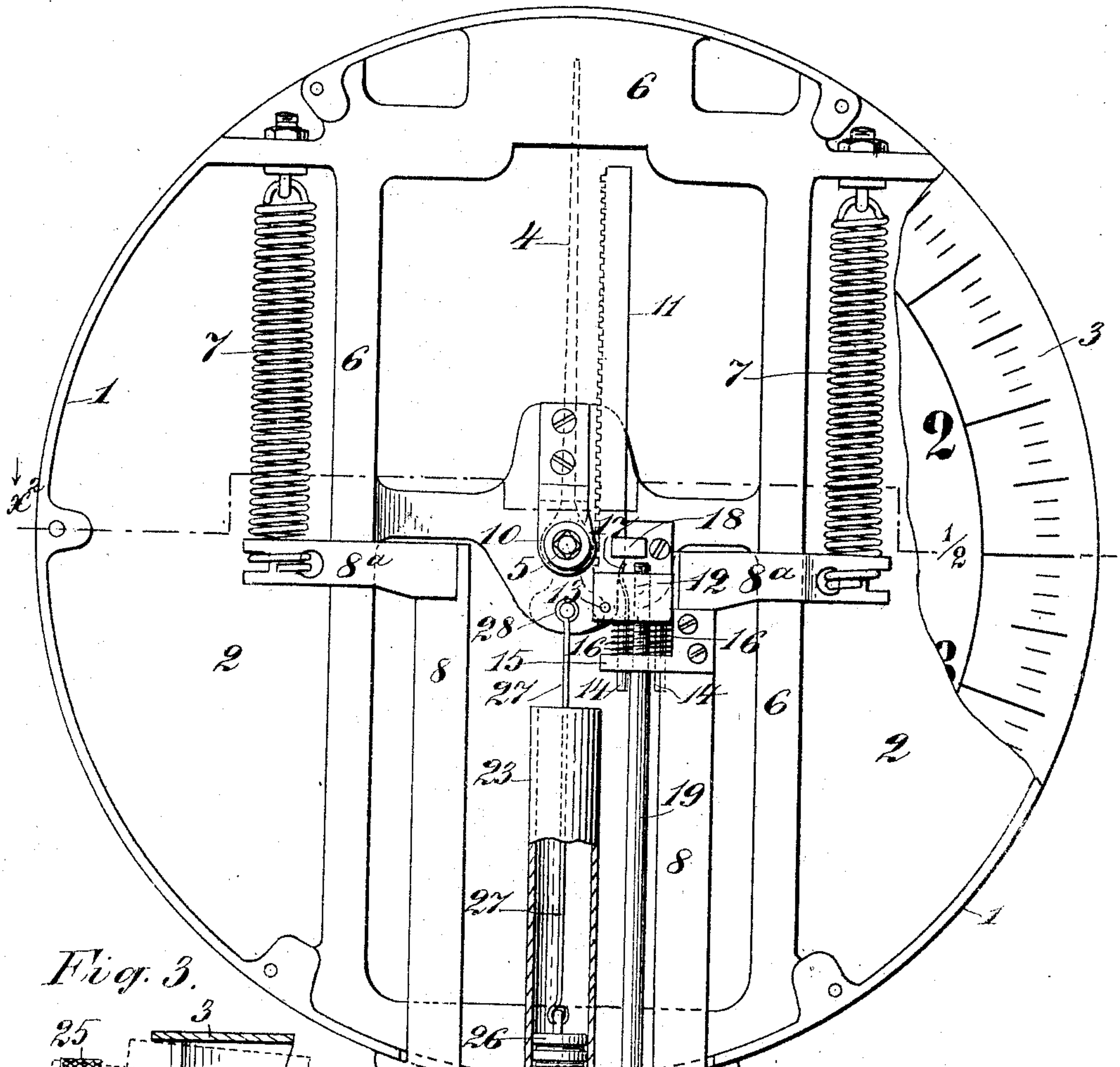


Fig. 3.

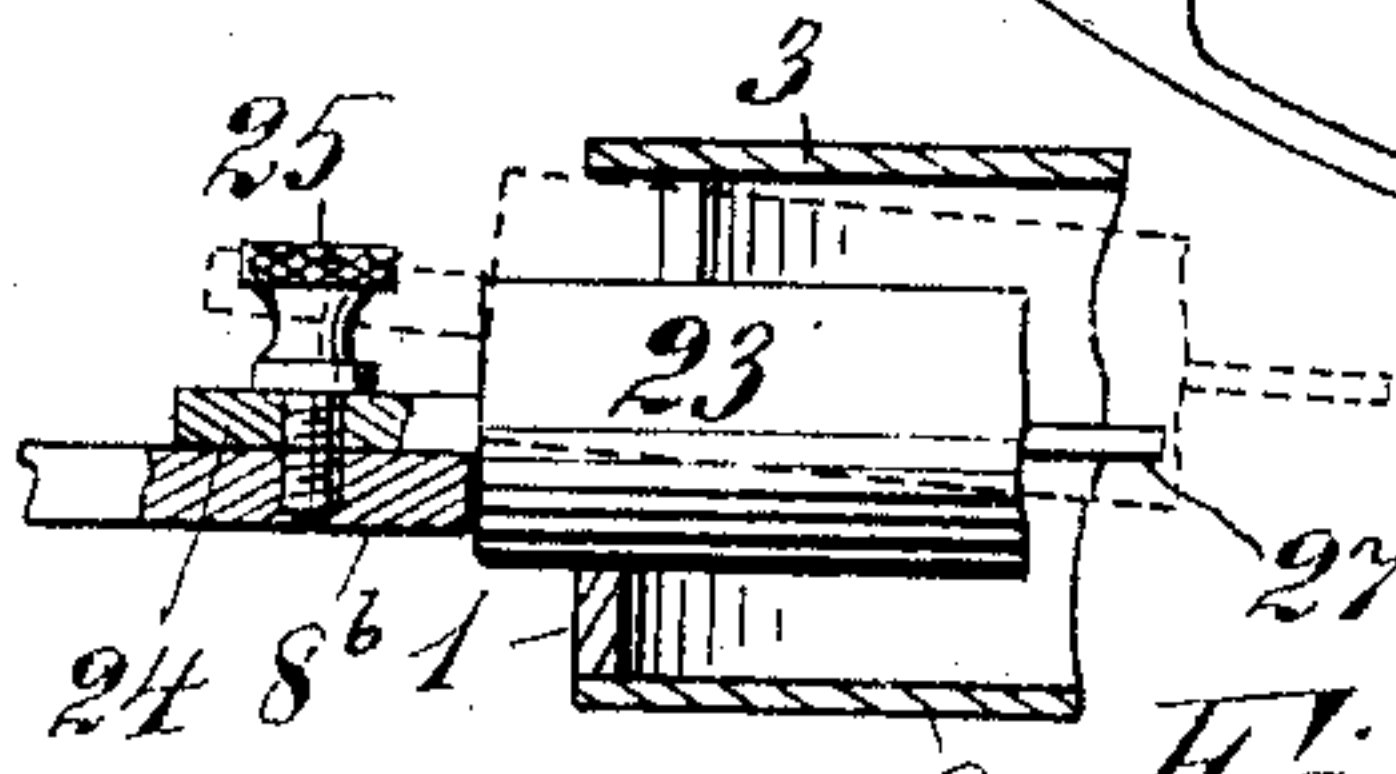
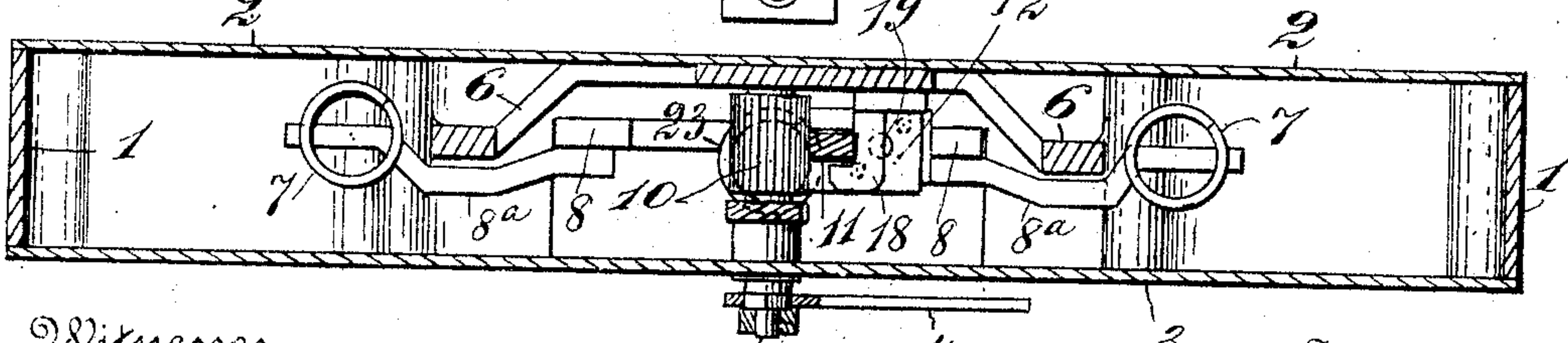


Fig. 2.



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SPRING-SCALE.

No. 811,980.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed August 2, 1905. Serial No. 272,374.

To all whom it may concern:

Be it known that I, OTTO C. WIESE, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings, in the city and State of New York, have invented certain new and useful Improvements in Spring-Scales, of which the following is a specification.

This invention relates to the class of spring-scales, and particularly to that type of such a scale, wherein means are employed for taking up the tare weight and wherein also a steadying device is employed to check the vertical vibrations when an article to be weighed is thrown in or on the scale-pan.

The object of the present invention is in part to improve the device for taking up the tare weight and in part to improve the said steadying device and render it readily removable for cleaning or repair.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a face view of the scale with the main portion of the dial broken away and the cylinder of the steadying device partly in section. Fig. 2 is a cross-section at x^2 in Fig. 1. Fig. 3 is a fragmentary view showing how the cylinder of the steadying device may be removed without displacing any of the other parts of the scale.

1 is the rim of the casing of the scale, usually of cast-iron and circular, and 2 is the back plate of the casing, usually of sheet metal.

3 is the dial, such as is usually found on spring-scales, and 4 is the hand or pointer, which traverses the dial. This hand is indicated in dotted lines in Fig. 1, and it may be secured, as usual, to a rotatably-mounted arbor 5 in the center of the casing.

Within the casing is a stout metal back frame 6, which is or may be cast integral with the circular casing, and from this frame, at the respective sides, are suspended two springs 7. Attached to the respective springs at their lower ends are lateral arms 8^a of a runner 8, to which the scale-pan may be attached at 9. It will be noted that this runner has a U shape with two upright members to which the arms 8^a are secured, and a transverse member or tie-piece 8^b at the bottom which is exterior to the casing and is drawn up by the springs normally, so as to fit against the curved outer face of the same, as seen at the bottom in Fig. 1.

The arbor 5 is provided, it may be integrally, with a pinion 10, with which gears a rack 11, and this rack engages at its lower end a slot in a nut-block 12, in which it is pivoted on a hinge-pin 13. The block 12 has fixed in it two guide-pins 14, which play in holes or sockets in a bracket 15 on an upright of the runner 8, and on these guide-pins are coiled compression-springs 16, between the nut-block and the bracket. A leaf-spring 17 keeps the hinged rack pressed up yieldingly to the pinion, and a keeper 18 on the back frame 2 guides the rack in its longitudinal movement.

To move the nut-block 12, and with it the rack 11 for regulating the tare, there is a rotatable upright rod 19, journaled below in a block 20 on the runner and above in the bracket 15. That portion of this rod above the bracket is screw-threaded and screws through the nut-block 12. The rod has a milled thumb-piece 21 for convenience of rotating it, and a set-screw 22 is provided at the bearing-block 20 to secure the rod against accidental rotation. The operation of this tare-regulating means is as follows: When a scale-pan or the like is hooked onto the runner at the hole 9, its weight will of course be shown by the hand 4. The user now turns the rod 19 by means of the thumb-piece 21 to move the rack 11 in such a way as to bring the hand to the zero-point. If he contemplates using the same scale-pan for some time, he may now set the screw 22 tightly, so as to prevent accidental rotation of the rod 19.

The steadying or damper device for checking the up-and-down vibrations of the runner and consequent vibrations of the hand will now be described, premising that the important feature in this is the ready removability of the cylinder of the device without the necessity of displacing any of the other parts. In the present construction 23 is the upright cylinder, which has at its bottom end a flat lug 24, apertured to receive a securing-screw 25. The bottom end of the cylinder fits up snugly to the member 8^b of the runner, and thus the cylinder is held in place firmly by the thumb-screw 25, as seen in Fig. 3. A piston 26 fits somewhat freely in the cylinder, and this piston is loosely coupled to the lower end of a piston-rod 27, which latter is loosely coupled at its upper end to the frame 2 at 28. When the runner moves up and down, the

piston is caused to play in the cylinder and to provide by the movement of the cylinder a steadying device for the runner, as before explained. It will be understood that the passage of air about the piston when the latter moves relatively to the cylinder is restricted, and this will act as a retarding feature or check to the quick movements of the runner. When it is desired to remove the cylinder 23 for any reason, it is only necessary to remove the thumb-screw 25, when the lower end of the cylinder may be lifted to clear it from the member 8^b, (see dotted lines in Fig. 3,) when the cylinder may be drawn out. The removal will be facilitated by drawing out or down the runner beforehand; but this is not essential. The loose connection of the rod 27 at its ends also facilitates the removal of the cylinder; but this loose coupling does not interfere in any way with the normal operation of the device.

It will be understood that no broad claim is made herein to a tare-regulating device nor to a device for steadying the runner of a spring-scale, as such devices have been used heretofore. The present invention relates to certain specific devices for these purposes, which have particular advantages.

The runner may have on it graduations, as seen at G, for registering weights above those which may be registered by one revolution of the hand 4 over the graduations on the dial.

Having thus described my invention, I claim—

1. A spring-scale, having a casing, a runner, a spring mechanism to which said runner is coupled, a nut-block mounted in guides on the runner, the said guides, a screw-threaded upright rod 19, mounted in bearings on the runner and screwing through said nut-block,

a spring mechanism below said block, an upright rack loosely coupled to the nut-block at its lower end, a central arbor provided with a hand to traverse the scale-dial, the said dial, and a pinion on said arbor and gearing with said rack.

2. A spring-scale, having a casing, a runner, a weighing-spring mechanism to which said runner is coupled, means actuated by the runner for designating the weight of any article or thing suspended from the runner, and means for steadying and measurably retarding the vibrations of the runner in weighing, said means comprising an upright cylinder secured removably at its lower end to the runner exterior to the casing, a piston in said cylinder, and a rod connecting said piston with a fixed part of the casing at a point above the cylinder.

3. A spring-scale, having a casing, two weighing-springs therein, a U-shaped runner 8, having arms 8^a, to which the weighing-springs are coupled, and a tie-piece 8^b, exterior to the casing, an upright cylinder 23, secured removably to the said tie-piece of the runner at its lower end, said cylinder being disposed between the upright members of the runner, a piston 26, which fits loosely in said cylinder, a rod 27, connecting said piston to a fixed part of the casing above the cylinder, and means whereby the extent of movement of the runner antagonistic to the weighing-springs designates the weight.

In witness whereof I have hereunto signed my name, this 27th day of July, 1905, in the presence of two subscribing witnesses.

OTTO C. WIESE.

Witnesses:

HENRY CONNETT,
WILLIAM J. FIRTH.