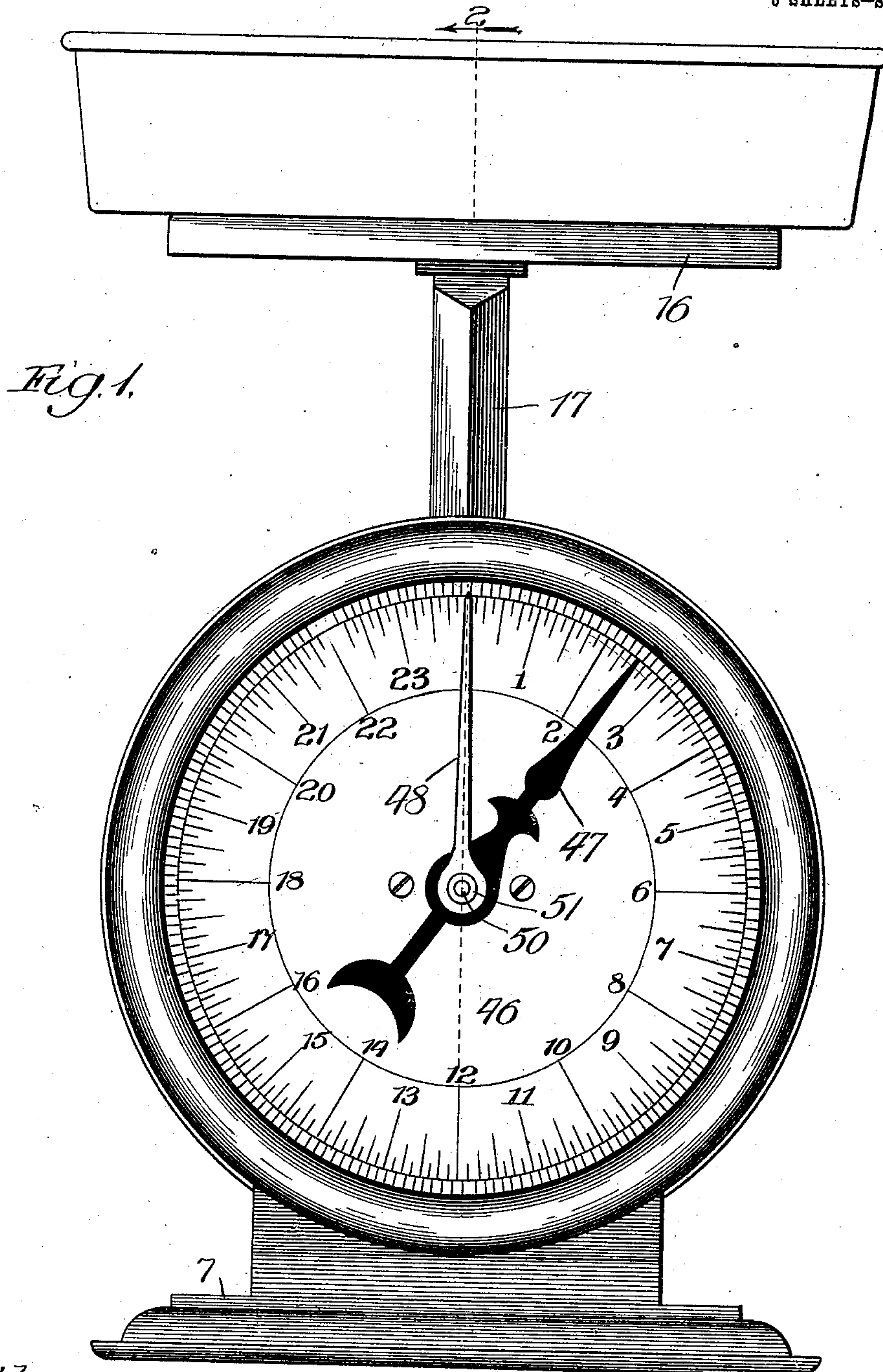


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WEIGHING SCALE.  
APPLICATION FILED APR. 21, 1910.

Patented May 23, 1911.

3 SHEETS—SHEET 1.



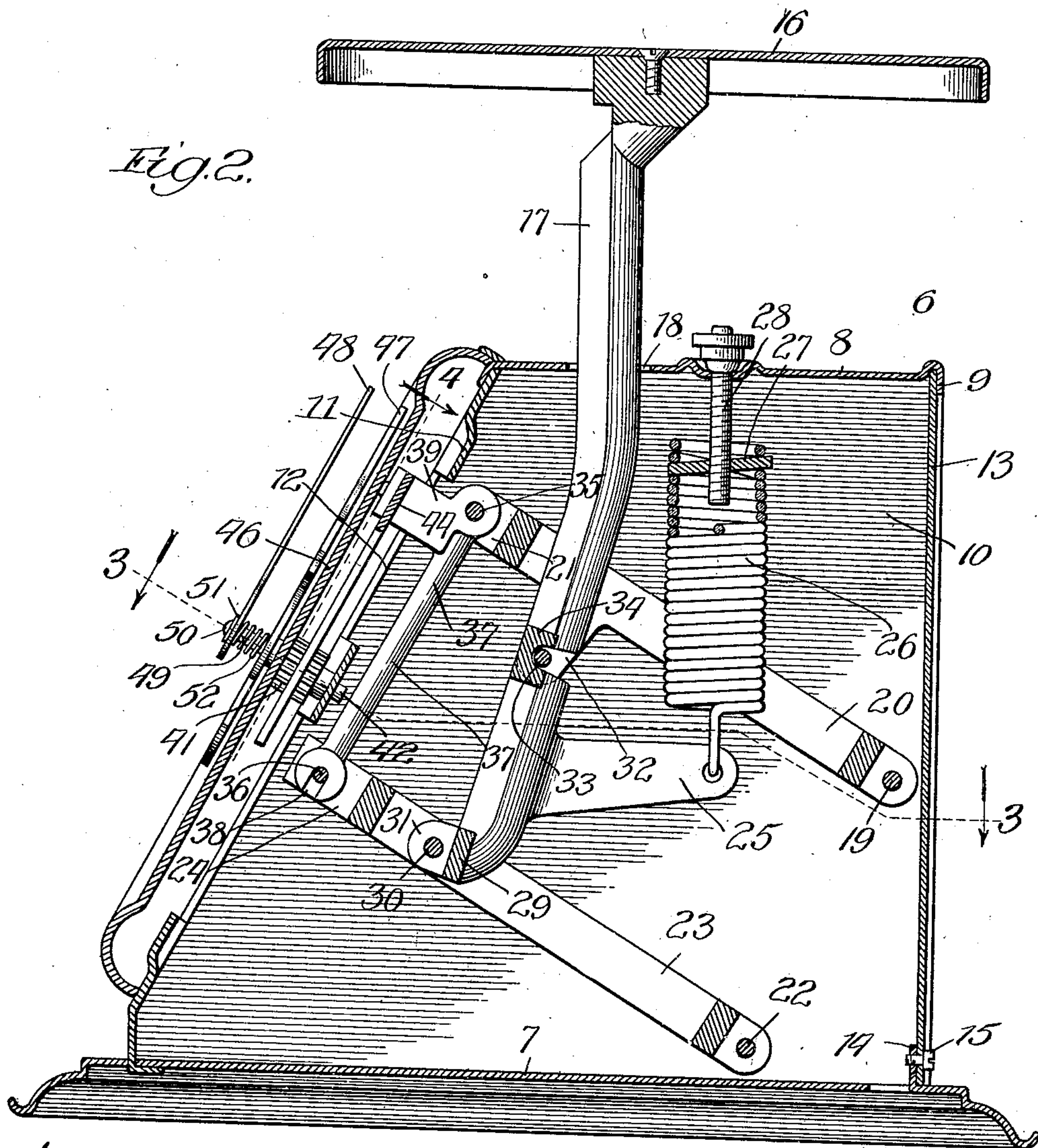
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

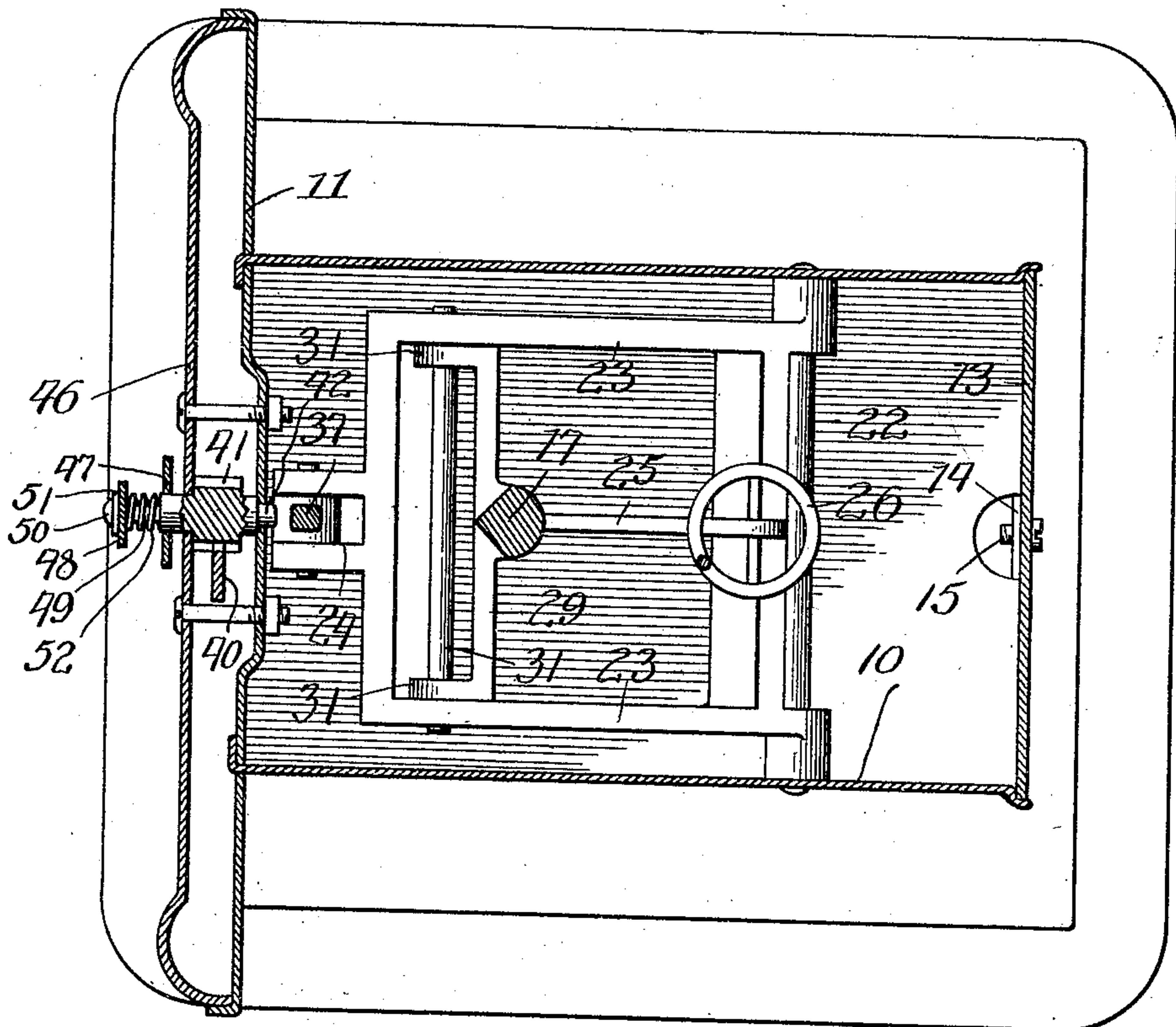
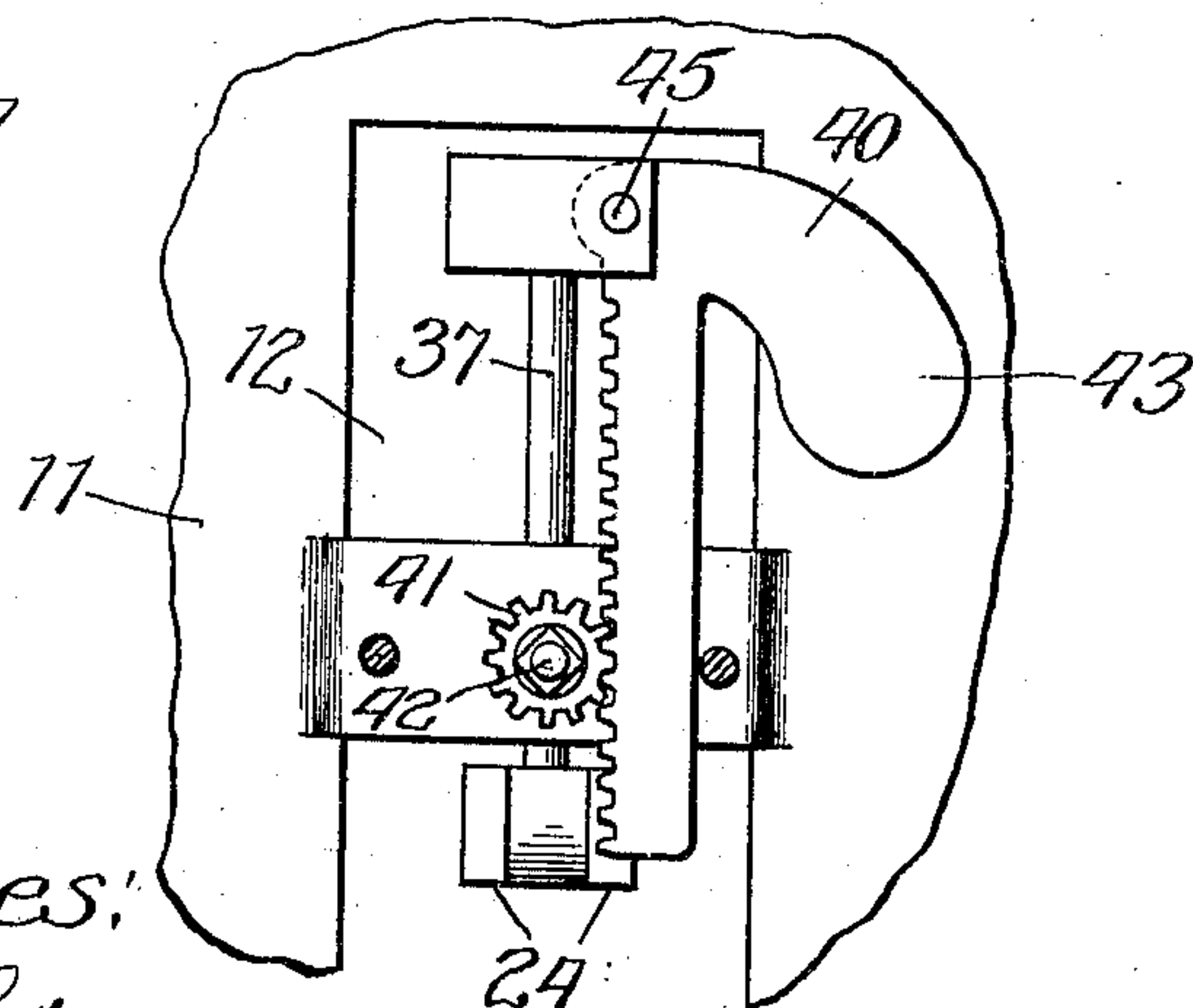


Fig. 4.



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# UNITED STATES PATENT OFFICE.

ELMER E. WECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN CUTLERY COMPANY,  
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## WEIGHING-SCALE.

993,005.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed April 21, 1910. Serial No. 556,694.

*To all whom it may concern:*

Be it known that I, ELMER E. WECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Weighing-Scales, of which the following is a specification.

One of my objects is to provide a simple construction of weighing-scale of the slanting-dial type, which will operate to accurately weigh articles placed thereon and which may be manufactured at relatively low cost; and another object is to provide a scale-casing of improved construction to the end of rendering the parts inclosed thereby readily accessible, as for purposes of adjustment.

Referring to the accompanying drawings—Figure 1 is a view in front elevation of a scale constructed in accordance with my invention. Fig. 2 is a section taken on the line 2 on Fig. 1 and viewed in the direction of the arrow. Fig. 3 is a section taken on the line 3 of Fig. 2 and viewed in the direction of the arrow; and Fig. 4, a broken section taken on the line 4 on Fig. 2 and viewed in the direction of the arrow.

The casing of the scale which is represented at 6, is formed of a bottom plate 7, a top plate 8 provided at its rear edge with a depending lip 9, sides 10 preferably integral with the top 8, an inclined front plate 11 provided with a vertical elongated slot 12, and a rear plate 13 adapted to be interlocked with the flange 9 as represented in Fig. 2 and bear against an upwardly-extending lip 14 on the base 7, to which latter the plate 13 may be secured as by a screw 15, the plate 13 by reason of the construction of the casing being adapted to be readily positioned on the casing and removed therefrom for the purpose of permitting access to the hereinafter described parts confined in the casing.

The platform 16 is carried on the upper end of a vertically reciprocable standard 17 which extends through an opening 18 in the top 8 of the casing, the lower end of this standard being slightly forwardly deflected as represented clearly in Fig. 2.

Journalled on a rod 19 extending transversely of the casing and secured in its sides 10, is a rectangular frame 20 constituting one of the levers of the pinion-operating mechanism, this lever being provided at its forward end with a pair of spaced lugs 21.

Pivoted on a rod 22 extending transversely of the casing and secured in the sides 10 thereof is a second rectangular frame 23 which is formed with a pair of spaced lugs 24 at its forward end, the pivotal connection of the frame 23 with the casing 6 being below and somewhat in advance of the pivotal connection of the frame 20 with the casing, for a purpose hereinafter explained.

The standard 17 is provided with a rearwardly-extending lug 25 which engages with the lower end of a coiled spring 26, the upper end of which carries a threaded disk 27, into which an adjusting screw 28 supported on the top 8 of the casing extends. The standard 17 is provided at its lower end with a cross-bar 29 at which the standard 17 has pivotal connection with the lever 23 through the medium of a rod 30 secured in the side-bars of this lever and passing through lugs 31 on the cross-bar 29. The side-members of the frame 20 are provided with depending lugs 32 which are pivotally connected, through the medium of a rod 33, with a cross-bar 34 formed on the standard 17 intermediate the levers 20 and 23, the effect of thus pivotally connecting the spring-supported standard and the levers 20 and 23 being that of causing these levers and standard to be normally held in the raised position indicated in Fig. 2 by the action of the spring 26, any pressure applied to the platform 16, as by placing an object thereon, causing the lever mechanism described to be forced down against the tension of the spring.

Pivoted at its upper and lower ends, respectively, to the lugs 21 and 24 through the medium of rods 35 and 36, is a link 37 which is preferably slotted at its lower end, as indicated at 38, to prevent any possible binding when operated as hereinafter described. The link 37 at its upper end carries a forwardly-projecting head 39 which extends through the opening 12 and forms a support for a pivotally mounted rack 40 which is held in engagement with a pinion 41 secured on a pointer-shaft 42, by means of a weight 43. It is preferred that the head 39 be laterally slotted as indicated at 44, and that the rack 40 be swingingly mounted therein, at its upper end, as through the medium of a pin 45.

The pointer-shaft 42 is journalled between its ends in a dial-plate 46 secured on the



front member 11 of the casing and has rigidly secured thereto a pointer 47 as is usual in constructions of this character, the rear end of the shaft 42 being journaled in the plate 11 as indicated in Fig. 3.

From the foregoing description it will be understood that when the article to be weighed is placed upon the platform 16, it will cause the standard 17 to be depressed against the action of the spring 26, and consequently cause the levers 20 and 23 to swing downwardly on their pivots 19 and 22, with the result of swinging their outer ends downwardly and thus depressing the link 37, the rack 40 in this operation traveling downwardly in engagement with the pinion 41 with the result of turning it and the pointer 47 carried thereby to indicate on the dial 46 the weight of the article on the platform.

By supporting the pinion-engaging rack on a link which has pivotal connection at its upper and lower ends with the forward ends of the levers 20 and 23 so journaled as to cause the pivotal connection of the lowermost lever with the casing to be forward of the pivotal connection of the upper lever with the casing, and particularly when the parts of the device are proportioned and arranged as illustrated, the link 37, when moved the required distance for indicating the weight of the article, will move through practically a straight path at right-angles to the axis upon which the pinion 41 rotates and thus the rack 40 is maintained at all times practically at a right-angle to such axis, and binding of the rack on the pinion is prevented, the friction between the parts of the scale operating as described being so slight as not to affect its sensitiveness for accurately producing the weighing function.

It is a common practice in weighing articles, especially in households, to place the article to be weighed on a container, such as a plate, before putting it on the platform, in which case, where but one pointer is employed, the weight indicated will be the gross weight of the article and the container. To readily and quickly determine the net weight of the article to be weighed, I provide a supplemental pointer 48 which is journaled on the outer end of a spindle 49 fixed on the pinion-shaft 42. The spindle 49 is headed as indicated at 50 and carries a washer 51 against which the pointer 48 is spring-pressed by a coiled spring 52 surrounding the spindle 49 and confined between the pointer 48 and the outer end of the shaft 42, whereby the pointer 48 will be held with such firmness as to cause it to turn when the pinion 41 is operated, but will be adapted to be turned by hand on the spindle without rotating the pinion 41.

One of the uses to which the supplemental pointer 48 may be placed is as follows: The

plate, or other container, for receiving the article to be weighed should be first placed upon the platform 16, whereupon both pointers, which normally stand at the zero mark, will move along the scale to a position in which they will indicate the weight of said container. The operator will then manually turn the pointer 48 back to the zero mark, thus causing the pointers to be positioned as illustrated in Fig. 1. The article to be weighed will then be placed upon the container and the weight of such article determined by the position that the pointer 48 occupies when moved beyond the zero mark along the scale by the action of the lever mechanisms under the added weight.

While I have illustrated and described my invention as embodied in a weighing scale of the slanting-dial type, I do not wish to be understood as intending to limit it, as regards the features of providing the form of casing shown, to its embodiment in a scale of this type, as it may be incorporated in any other suitable type of scale.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a weighing-scale, the combination of a casing provided with a slanting dial, a support for the article to be weighed, a pair of levers arranged one above the other and pivotally supported at their rear ends to the casing and having pivotal connection between their ends with said support, means for yieldingly holding said support and levers in raised position, a link pivotally connected at its opposite ends with the forward ends of said levers, a shaft journaled in the casing, a pinion and a pointer on said shaft, and a rack carried by said link and engaging with said pinion.

2. In a weighing-scale, the combination of a casing provided with a slanting dial, a support for the article to be weighed, a pair of levers arranged one above the other pivotally supported at their rear ends in said casing, with the pivotal support for the lower lever arranged forward of the upper lever, and both levers pivotally connected between their ends with said article-support, means for yieldingly holding said support and levers in raised position, a link pivotally connected at its opposite ends with the forward ends of said levers, a shaft journaled in the casing, a pinion and a pointer on said shaft, and a rack carried by said link and engaging with said pinion.

3. In a weighing-scale, the combination of a casing provided with a slanting dial, a support for the article to be weighed, a pair of levers arranged one above the other pivotally connected at their rear ends with said casing, with the pivot-point of said lower lever located in advance of the pivot-point of said upper lever, said levers being pivotally connected between their ends with said



support, means for yieldingly holding said support and levers in raised position, a link pivotally connected at its opposite ends with the forward ends of said levers and arranged substantially parallel with the plane in which said levers are pivoted at their rear ends, a shaft journaled in the casing, a pinion and a pointer on said shaft, and a rack carried by said link and engaging with said pinion.

4. In a weighing-scale, the combination of a casing provided with a slanting dial, a support for the article to be weighed, a pair of pivotally supported levers in said casing having pivotal connection with said support, means for yieldingly holding said support and levers in raised position, a pivot-pin on the forward end of one of said levers, a link pivotally connected at one end with one of said levers and containing a slot at its opposite end at which it straddles said pivot-pin, a shaft journaled in the casing, a pinion and pointer on said shaft, and a rack carried by said link and engaging with said pinion.

5. In a weighing-scale, the combination of a casing provided with a slanting-dial, a support for the article to be weighed, pivotally supported lever-mechanism in said casing having pivotal connection with said support and formed with a pair of upper and lower spaced levers, means for yieldingly holding said support and lever-mechanism in raised position, a link pivotally connected

at its opposite ends to said upper and lower levers, a shaft journaled in the casing, a pinion and pointer on said shaft, and a rack carried by said link and engaging with said pinion.

6. In a weighing-scale, the combination of a casing provided with a slanting dial, a support for the article to be weighed, pivotally supported lever-mechanism in said casing having pivotal connection with said support and formed with a pair of upper and lower spaced levers, means for yieldingly holding said support and lever-mechanism in raised position, a link pivotally connected at its opposite ends to said upper and lower levers, a shaft journaled in the casing, a pinion and pointer on said shaft, and a rack pivotally connected with said link and engaging with said pinion.

7. A casing for a weighing-scale formed of a bottom plate provided with an upwardly-extending member, sides, a front plate, a top provided with a depending lip, a removable and replaceable rear plate adapted to be introduced behind said lip and swung transversely thereof toward said upwardly-extending member, and means for securing said plate at its lower edge to said member, for the purpose set forth.

ELMER E. WECK.

In presence of—

ISAAC HIRSCH,  
RALPH SCHAEFER.