

No. 685,878.

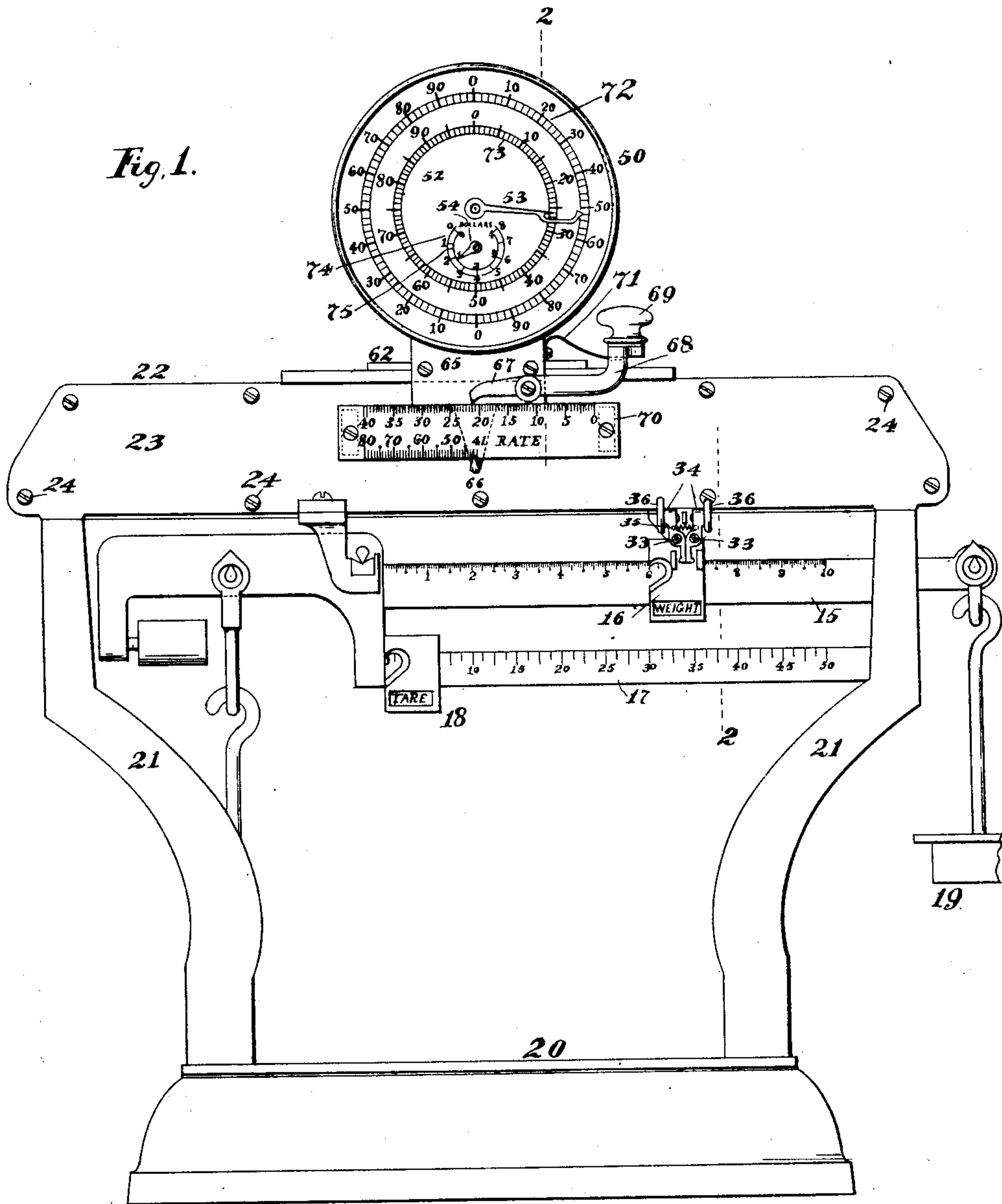
Patented Nov. 5, 1901.

E. F. SPAULDING.
COMPUTING PRICE SCALE.

(Application filed Feb. 27, 1901.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

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4 Sheets—Sheet 2.

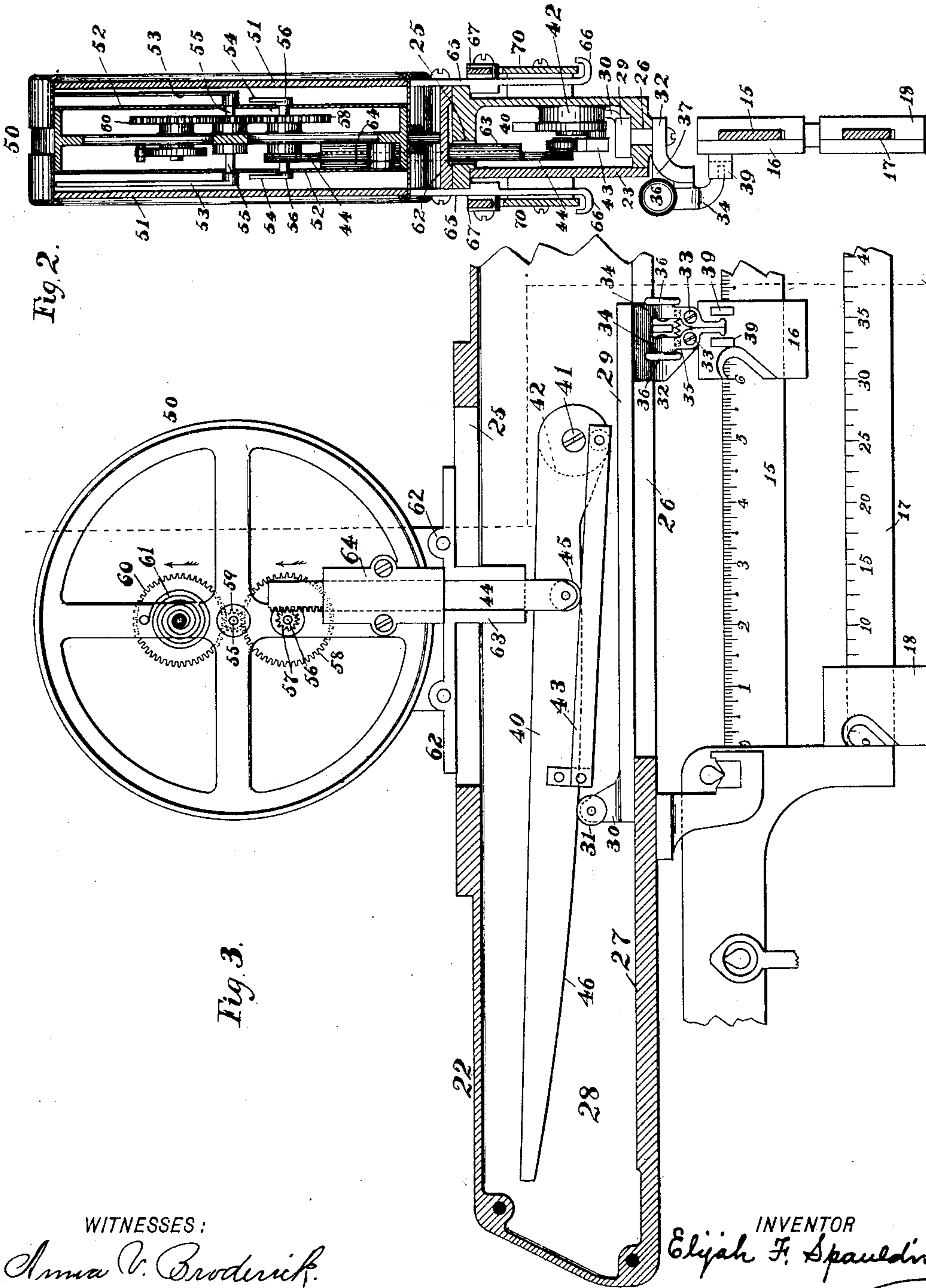


Fig. 2.

Fig. 3.

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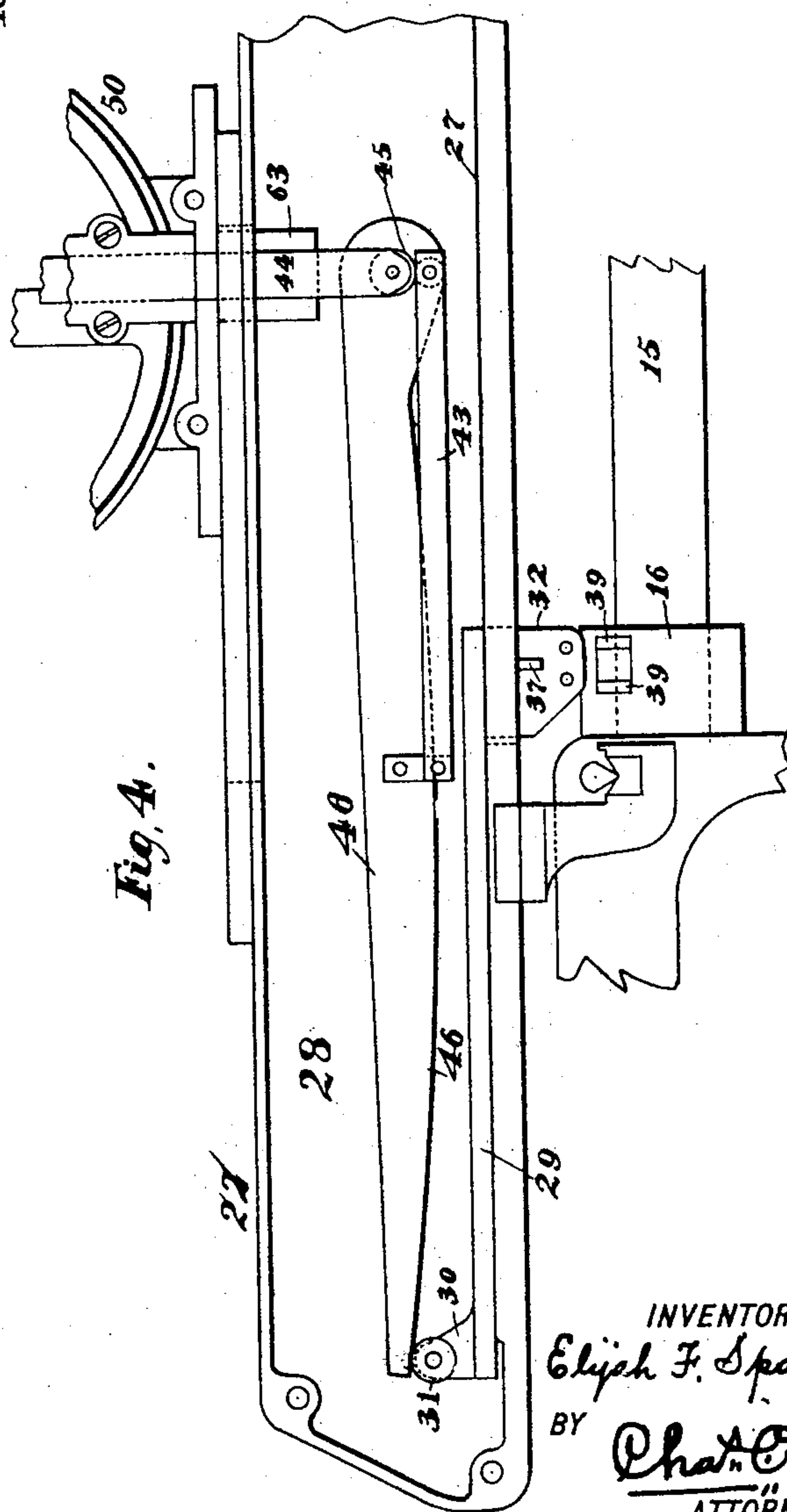
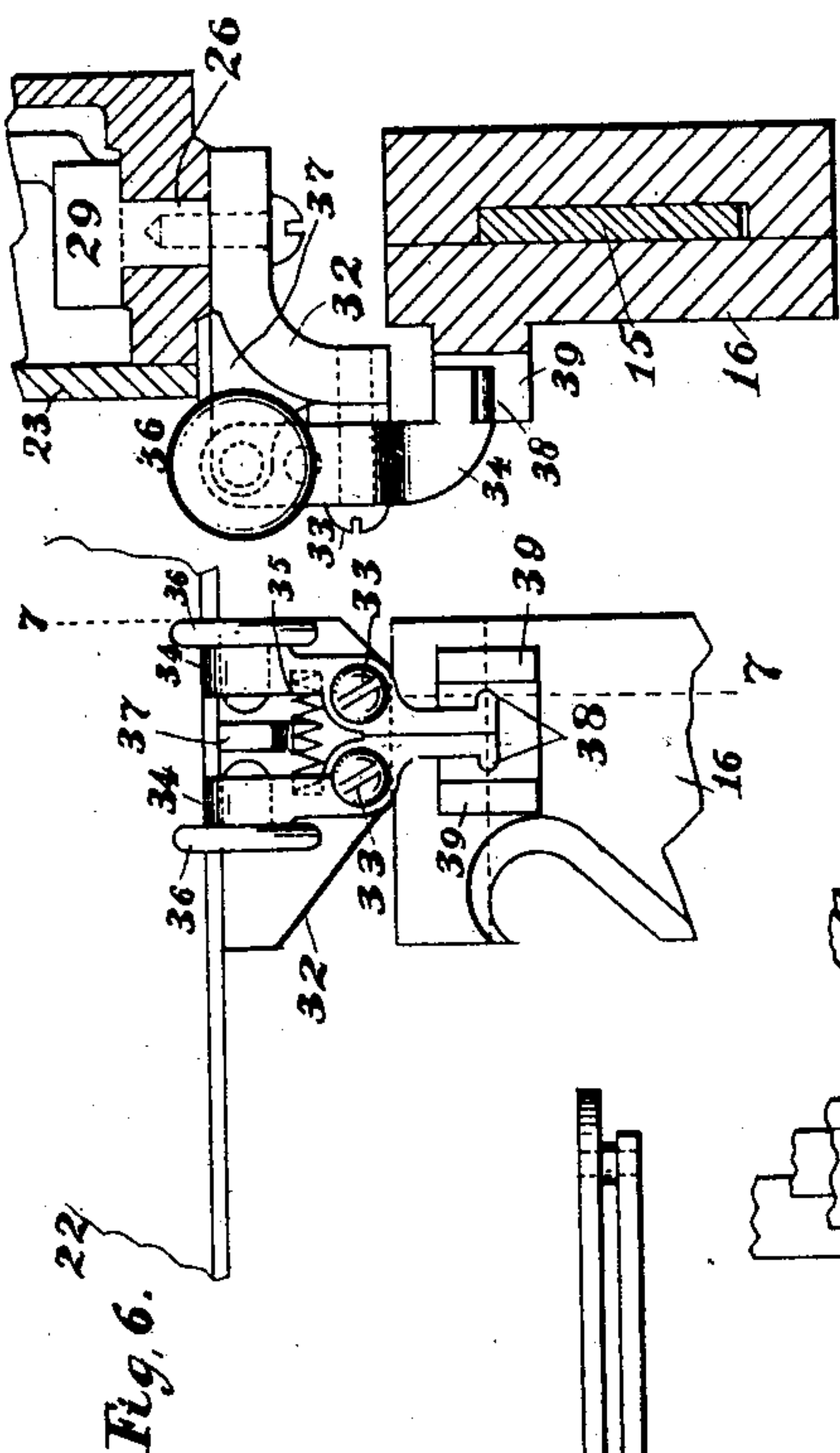
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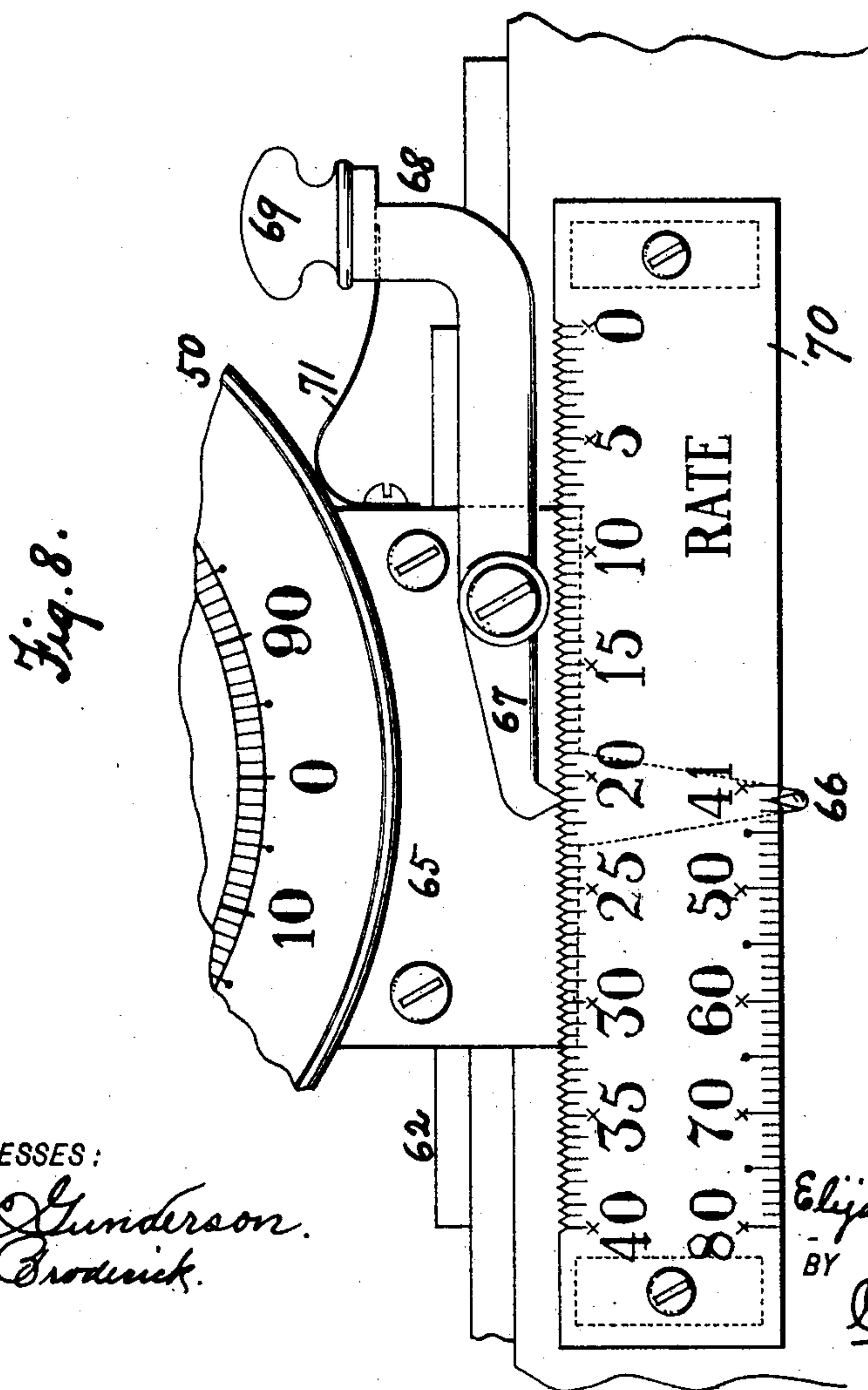
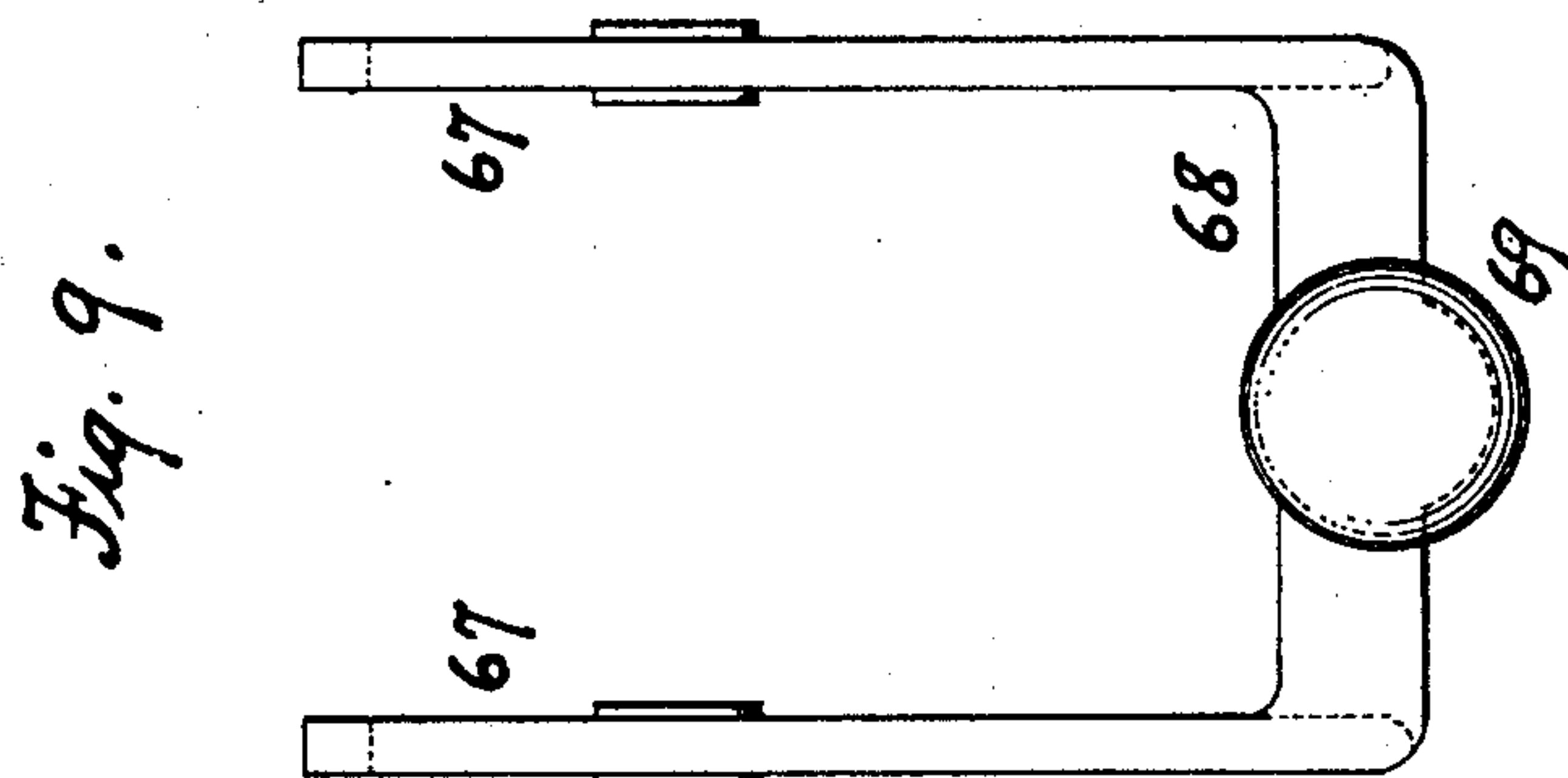
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(Application filed Feb. 27, 1901.)

(No Model.)

4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

ELIJAH F. SPAULDING, OF ARLINGTON, MASSACHUSETTS.

COMPUTING PRICE-SCALE.

SPECIFICATION forming part of Letters Patent No. 685,878, dated November 5, 1901.

Application filed February 27, 1901. Serial No. 49,080. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH F. SPAULDING, a citizen of the United States, and a resident of Arlington, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Computing Price-Scales, of which the following is a specification.

The invention relates to improvements in computing price-scales; and it consists in the novel features and combinations of parts hereinafter described, and particularly pointed out in the claims.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a computing price-scale constructed in accordance with and embodying the invention. Fig. 2 is a sectional view of same on the dotted line 2 2 of Fig. 1. Fig. 3 is a vertical longitudinal section through a portion of same to illustrate the interior mechanism intermediate the weight-poise and the shafts for the hands or pointers of the indicating or dial mechanism, the section being through the casing which incloses said mechanism. Fig. 4 is a detached side elevation of the said mechanism intermediate the weight-poise and the shafts of the indicating or dial mechanism, said intermediate mechanism, with the weight-poise, being shown in their "0" position and the front plate of the casing inclosing said intermediate mechanism being omitted. Fig. 5 is a detached top view of a pivoted lever-bar constituting a part of the invention and which is comprised in the aforesaid intermediate mechanism between the weight-poise and the shafts of the indicating or dial mechanism. Fig. 6 is an enlarged detached front elevation, partly broken away, of the weight-poise and the connections whereby the movement of the said poise is caused to be transmitted to the aforesaid intermediate mechanism. Fig. 7 is a vertical section of same on the dotted line 7 7 of Fig. 6, the parts constituting the connection between the weight-poise and the said intermediate mechanism being shown in end elevation. Fig. 8 is an enlarged front view of a portion of the scale, this view being presented to clearly illustrate

the rate scale-plate; and Fig. 9 is an enlarged detached top view of a bifurcated frame or dog which affords the pointers for the upper edge of the rate scale-plates.

In the drawings I have illustrated the parts composing the present invention as being connected with usual weighing mechanism, represented by the weight-beam 15, weight-poise 16, tare-beam 17, tare-poise 18, counterpoise 19, suspended from the longer arm of the weight-beam 15, platform 20 to receive the material to be weighed, and suitable usual intermediate connections between said platform and the short arm of the weight-beam 15, the latter being pivotally mounted, as usual, and all of said parts being of usual and known construction, and therefore requiring no special explanation.

The parts comprising the present invention are disposed in the present instance above the weight-beam 15, and upon reference to the drawings it will be observed that the sides 21 21 of the scale-frame support at their upper ends the casing 22, which is hollow and extends from side to side of the scale structure and is adapted to be closed by a suitable front plate 23, to be fastened in position by means of screws 24, as shown in Fig. 1. The hollow casing 22 is shown as to its interior form in Figs. 3 and 4, and in Fig. 3 it will be observed that an elongated slot 25 is formed in the top of said casing 22 and that a similar slot 26 is formed in the bottom of the said casing 22. Upon the floor 27 of the chamber 28, formed by the casing 22, is applied a slide-bar 29, which is adapted to be moved longitudinally along said floor 27 and is formed at one end with the bracket 30, carrying the roller 31, while at its other end said slide-bar 29 extends downward through the slot 26 and has secured to its lower portion the bracket 32, which, as shown in Figs. 2 and 7, extends frontward and has pivotally secured to it by means of the screws or pins 33 33 the arms 34 34, which correspond with one another and are normally kept closed together at their lower portions by means of the spring 35. (Shown more clearly in Fig. 6.) The arms 34 34 are provided with thumb-pieces or handles 36 36, by means of which the upper portions of said arms 34 34 may be conveniently pressed toward one another and against the

stop 37, formed on the bracket 32. The lower ends of the arms 34 have at their outer sides the small rounded lugs 38, Figs. 6 and 7, which are centrally disposed between vertical flanges 39 39, carried by the weight-poise 16, the horizontal central line of said lugs 38 being on a line with the upper edge of the weight-beam 15. The arms 34 34 constitute the connecting means intermediate the weight-poise 16 and the bracket 32, connected with and carried by the slide-bar 29. The slide-bar 29 and weight-poise 16 always preserve a uniform relation to one another, and hence the said bar and the said poise move together.

The movement of the poise 16 and bar 29 is effected by the operator, who will when it is desired to move said poise grasp the handles 36 of the arms 34 between the thumb and forefinger and move the poise 16 and bar 29 in either direction at will. The grasping of the handles 36 of the arms 34 will cause the upper ends of said arms to close toward the stop 37 and move the lower ends of said arms outward from one another to a limited extent, just sufficient to cause the outer edges of the lugs 38 to all but press into contact with the facing surfaces of the flanges 39 on the poise 16, and then the operator by pressing in one direction or the other, as desired, against the arms 34 will move the poise 16 and sliding bar 29 at will. When the operator has moved the poise 16 and sliding bar 29 to the desired position, he will release his hand from the arms 34 34 and allow the spring 35 to close the lower ends of the said arms 34 34 together, whereby the outer edges of the lugs 38 become sufficiently relieved from the flanges 39 on the poise 16 to permit of the proper tilting motion of the weight-beam 15 without such action being interfered with by the said arms 34. The pivoted arms 34 34 afford a connecting means intermediate the weight-poise 16 and slide-bar 29, (without interfering with the tilting action of the weight-beam 15,) by which the operator may by hand move said weight-poise 16 and slide-bar 29 in a uniform manner with respect to one another. The slide-bar 29 is guided in its movement by the fact that at its end opposite to the roller 31 it extends downward through the slot 26, and it is obvious that the portion of said slide-bar 29 which projects downward through the slot 26 will prevent lateral play in said bar 29.

Within the chamber 28 is pivotally mounted the actuating lever-bar 40, said lever-bar 40 being at its right-hand end secured upon a pivot screw or pin 41 and against the face of a boss 42, which is formed on the inner vertical rear wall of the casing 22, as more clearly illustrated in Fig. 2. Upon the side of the lever-bar 40 is rigidly secured the bar 43, which constitutes a tramway for the vertical rack-bar 44, by which the hands of the indicator mechanism are actuated. The tramway-bar 43 is rigidly secured at both ends and has no movement, except with the lever-bar 40. The rack-bar 44 will be referred to more par-

ticularly hereinafter; but at this point it may be observed that said bar 44 extends downward at the side of the lever-bar 40 and is provided at its lower end with a roller 45, which is adapted to travel upon the said tramway-bar 43, as clearly illustrated in Fig. 3. The vertical rack-bar 44 receives its movement from the tramway-bar 43, and the latter, while normally horizontal, is given a more or less inclined position for the purpose of actuating the rack-bar 44 to a more or less extent from the lever-bar 40, which is pivoted at one end, as aforesaid, and has a more or less inclined position imparted to it by the roller 31, carried by the slide-bar 29, when said bar 29 is moved by the operator during the movement of the weight-poise 16 along the weight-beam 15. It will be explained hereinafter that the indicating-dial mechanism is movable along the top of the casing 22 in accordance with the price per pound of the material to be weighed upon the platform 20; but at this place the operation of the slide-bar 29, lever-bar 40, and tramway-bar 43 may be largely understood without reference to the shifting action of the indicating or dial mechanism. The lever-bar 40 has no sliding motion, but only a pivotal motion, and is distinctive in that its lower edge 46 is so curved that for uniform motion of the poise 16 the tangent of the angle of inclination of the bar 40 will change uniformly. During the movement of the weight-poise 16 the roller 31 travels against the curved edge 46 of the bar 40, and thereby through the said bar 40 effects the proper inclination of the tramway-bar 43 for coöperation with the vertical rack-bar 44. It will be apparent that if the edge 46 of the lever-bar 40 were simply a plain inclined edge the nearer the roller 31 approached the pivot-point 41 of the said bar 40 the ratio of the upward movement of the said bar 40 in comparison to the extent of movement of the weight-poise 16 would not be uniform, but would rapidly increase as the roller 31 approached the right-hand end of the said bar 40, the result under such circumstances being that the indicating price mechanism could not be relied upon. In Fig. 4 I illustrate the relative positions of the lever-bar 40 and slide-bar 29 when the weight-poise is at its "0" position on the beam 15, and when the parts are in this position the hands of the indicating-dial will be at "0" and the roller 45 at the lower end of the vertical rack-bar 44 will be in line with the pivot-point 41 of the lever-bar 40, as shown in Fig. 4. When the parts are in their normal "0" position, (shown in Fig. 4,) any tilting movement that the weight-beam 15 may have imparted to it—as by jarring the scales, for instance—will have no influence upon the indicating mechanism, since such jarring would not cause any sliding motion of the slide-bar 29, and if it did cause any sliding motion of the slide-bar 29 the vertical rack-bar 44 would still remain stationary, since its lower end is on the pivotal point 41 for the lever-bar 40,

and the right-hand end of the tramway-bar 43 would simply roll on the arc of the roller 45 at the lower end of the said bar 44 without effecting any motion in said bar 44.

5 The indicating mechanism is carried by the cylindrical casing 50, which in itself as a mechanical structure is not new; but the indicating mechanism possesses novelty in respect of the arrangement of the indicating-
 10 numerals on the dial thereof and in respect of its adaptation to be moved along the top of the casing 22 for the purpose of carrying the actuating vertical rack-bar 44 to the proper position along the tramway 43 with
 15 relation to the price per pound of the merchandise to be weighed upon the platform 20. The casing 50 will preferably have at both its front and back a glass protecting plate or disk 51, at the inner side of each
 20 of which glass plates will be placed the numeral-bearing dials 52, hereinafter explained, and over which the hands 53 54 will travel under the influence of the rotary shafts 55 56 therefor. The shafts 55 56 are set in
 25 motion to move the hands 53 54 by means of the rack-bar 44 and the gearing shown in Fig. 3 for communicating motion from the upper toothed end of said rack-bar 44 to said shafts 55 56. Upon the shaft 56 is provided
 30 the pinion-wheel 57 and gear-wheel 58, said pinion 57 being in direct engagement with said rack-bar 44, while the gear-wheel 58 is in mesh with the pinion 59, secured on the shaft 55 for the hands 53. The movement of the rack-bar
 35 44 will through the pinion 57 rotate the shaft 56 and hands 54, and the motion of the shaft 56 will be imparted through the gear-wheel 58 to the pinion-wheel 59 and shaft 55 for the hands 53. I also provide a gear-wheel 60, Fig. 3,
 40 which is in mesh with the pinion-wheel 59 and has connected with it a spring 61, which exerts a constant tension to turn the wheel 60, pinion-wheel 59, gear-wheel 58, and pinion-wheel 57 in a direction contrary to that
 45 imparted to said gear-wheels by the vertical rack-bar 44, and the purpose of the gear-wheel 60 and spring 61 is to prevent lost motion in said chain of gearing and insure regularity in travel and position of the indicating-
 50 hands 53 54. It will be observed that in the present instance the hands 53 54 and dials 52 are duplicated at opposite sides of the casing 50, and this construction is desirable because it permits of the exposure of the price at both
 55 the front and back of the scales; but the invention is not limited to this feature of the construction, since the invention would be fully present if one side of the casing 50 were simply a blank and the indicating-dial 52 and
 60 hands 53 54 were present at the opposite side thereof.

The casing or frame 50 for the indicating mechanism is mounted upon a base or frame 62, which rests and is adapted to be moved
 65 upon the top of the casing 22, and the said base or frame 62 is formed with the downwardly-projecting guide 63, Fig. 3, which

snugly receives the vertical rack-bar 44 and extends across the slot 25, formed in the top of the said casing 22, the said guide 63 thus
 70 serving to guide both the vertical rack-bar 44 and the said base or frame 62, carrying the indicating mechanism. Within the indicator-casing is provided an additional guide 64 for the upper portion of the rack-bar 44.
 75

Upon opposite sides of the base or frame 62 for the indicator mechanism are secured by small screws the downwardly-extending plates 65 65, whose lower ends terminate in pointers 66 66, Figs. 1, 2, and 8, and to whose
 80 upper portions are pivotally secured the arms 67 67 of the bifurcated dog 68, having, as shown in Fig. 1, a handle 69, by which said dog 68 may be operated by hand. The inner ends of the arms 67 of the dog 68 constitute point-
 85 ers and are of knife-edge form or sharpened, so as to engage the notches along the upper edge of the rate scale-plates 70 70, secured upon the front and back of the aforesaid casing 22, as shown in Figs. 1 and 2. The rate
 90 scale-plates 70 are set out from the front and rear surfaces of the casing 22, so that the lower parts of the plates 65 65 may pass downward to the inner side of the said scale-plates 70 and that the pointers 66 at the lower ends
 95 of the said plates 65 may turn upward upon the lower edge of said scale-plates 70, whereby the faces of the said plates 70 are left fully exposed to view. I bifurcate the dog 68, so that it may straddle the edge of the casing
 100 22 and be utilized with the plates 70 at both the front and rear sides of the said casing 22; but when desired only one scale-plate 70 will be employed, and under such circumstances it will not be necessary to employ a dog 68
 105 having two arms 67. The plates 65 serve to guide as well as to maintain the indicating mechanism on the top of the casing 22, and, as shown in Fig. 2, the said plates 65 have small inwardly-extending portions or projec-
 110 tions which pass below the laterally-projecting edges of the top of the casing 22, whereby the said plates 65 are enabled to aid in holding the indicating-dial and its mechanism in position down upon the top of the said casing
 115 22. The dog 68 at its handle end is provided with a tension-spring 71, which serves to press upward on the handle end of the dog 68 and maintain the pointed ends of the said dog in mesh with the notches or serrations along the
 120 upper edge of the rate scale-plates 70.

The rate scale-plates 70 are provided, as shown in Figs. 1 and 8, with two sets of numerals, one set of numerals being at the upper edge of said plates and the lower set of nu-
 125 merals being at the lower edge of said plates, and the latter being arranged with respect to the markings thereof to represent just double the amount represented by the numerals at the upper edge of said plates—as, for
 130 illustration, the numerals at the lower edge of the plates 70 denoting sixty cents (60¢) are below the numerals “30” at the upper edge of said plates denoting thirty cents, (30¢.)

The rate scale-plates 70 represent the various prices per pound which may be charged for the merchandise to be weighed upon the platform 20 of the main scales. The arms 67 of the dog 68 are utilized in connection with the series of numerals along the upper edges of the plates 70, while the pointers 66 are utilized in connection with the numerals along the lower edges of the said plates 70. It is not necessary, as will be described hereinafter, to employ numerals at both the upper and lower edges of the rate-plates 70; but when the numerals are thus employed the rate-plates 70 may be of reduced length, and only a limited amount of movement will be necessary in the casing 50 along the top of the casing 22. I will, however, first describe the mechanism as employing the numerals at both the upper and lower edges of the rate-plates 70 and then point out that one set of said numerals may be omitted, if desired. The dog 68 is carried by the plates 65, which are rigidly connected with the base plate or frame 62 of the dial-casing 50, and hence whenever the dog 60 is moved along the rate-plates 70 to the proper point indicating the price per pound for the material to be weighed the dial-casing 50 and all of the mechanism carried thereby, including the base-frame 62, vertical rack-bar 44, and vertical guide 63, are correspondingly moved along the top of the casing 22. When the pointed ends of the arms 67 of the dog 68 are at "0" of the rate scale-plates 70, the lower end of the vertical rack-bar 44 for actuating the dial mechanism will be in line with the pivot-point 41 of the lever-bar 40, and at such time the tramway-bar 43 will be unable to effect any vertical movement in said rack-bar 44, and consequently at that time and under such conditions the hands 53 54 of the dial mechanism will be at their "0" position. If it be assumed that some merchandise is to be weighed upon the platform 20 and that the price per pound thereof is, say, twenty-one cents, (21¢,) the dog will be elevated from the rate-plate 70 by pressure applied upon the handle or knob 69 of said dog, and thereupon the indicating-dial casing, with its inclosed mechanism, and the said dog 68 will be moved toward the left until the left-hand end of the said dog is directly over the mark denoting 21 of the rate-plates 70, as shown in Fig. 8, whereupon the operator will release the knob or handle 69 and allow the pointed left-hand ends of the dog 68 to descend directly upon the said plates 70. This movement toward the left of the indicating-dial casing 50 and its mechanism results in the vertical actuating rack-bar member 44 being carried to the left from the pivot-point 41 of the lever-bar 40 to about the position in which said rack-bar 44 is shown in Fig. 3, and when in such position the rack-bar 44 will be in the correct relation to the tramway-bar 43 to be properly elevated by the latter under the action of the slide-bar 29 when the weight-poise 16 is moved

along the weight-beam 15 to the proper position to denote thereon the amount in pounds and fractions thereof of the merchandise upon the platform 20. After the indicating-dial casing 50 and its inclosed mechanism are shifted to the proper position along the top of the casing 22 to bring the vertical actuating rack-bar member 44 into proper relation to the tramway-bar 43 and lever-bar 40, the weight-poise 16 will be moved along the weight-beam 15 until the beam 15 becomes balanced by the merchandise on the platform 20, and this movement of the weight-poise 16 is simultaneous with the movement of the slide-bar 29, and hence while the weight-poise 16 is being moved to position the roller 31 of the slide-bar 29 is drawn along below the lower edge 46 of the lever-bar 40 and effects the proper movement of the said lever-bar 40, tramway-bar 43, and vertical rack-bar member 44, with the result that when the weight-poise 16 has reached its final position the slide-bar 29 will have moved the lever-bar 40 and rack-bar 44 to their final upward position, and said bar 44, operating through the chain of gearing, will have moved the indicator-hands 53 54 to their final position, whereby said hands are caused to denote on the dials 52 the total price to be charged for the merchandise weighed upon the platform 20. The purpose of shifting the dial-casing 50 and rack-bar 44 along the top of the casing 22 is for the purpose of properly varying the relation of the lower end of the said rack-bar 44 to the pivot-point 41 of the lever-bar 40 in accordance with the price per pound to be charged for the merchandise weighed on the platform 20, and the vertical rack-bar 44 having thus been given its proper position by shifting the dial-casing, the extent of vertical movement of said rack-bar 44 to rotate the hands 53 54 will be governed wholly by the position of the weight-poise 16 on the beam 15 and of the slide-bar 29 below the lever-bar 40. The indicating-dial casing 50, with the rack-bar 44, are moved toward the left or right with each variation in price per pound to be charged for the merchandise to be weighed, and in every instance the operator will find it convenient to make use of the dog 68 and rate scale-plates 70 for definitely locating the rack-bar 44 in its proper relation to the lever-bar 40 and tramway-bar 43, said dog 68 and rate scale-plates 70 affording suitable means for guiding the operator in shifting the indicating-casing 50.

The indicating-dials 52 have, as shown in Fig. 1, two circles or series of graduations (numbered 72 73, respectively) for cent denominations and also two series of numerals or graduations (numbered 74 75, respectively) for dollars, and the small hands 54 travel along the graduations 74 75, while the longer hands 53 are double-pointed and travel along the circles or series of graduations 72 73. In the use of the indicating-dials 52 the attendant

will determine the total price to be paid for the merchandise weighed by reading from one of the small circles or series of graduations 74 75 and one of the larger circles or series of graduations 72 73 in accordance with the conditions. For illustration, if the price per pound of the merchandise weighed was, say, twenty-one cents and the total weight six pounds the operator would determine by the position of the hand 54 along the inner series of graduations 75 and by the position of the hand 53 along the inner series of graduations 73 that the price for the total weight was one dollar and twenty-six cents, since, as will be observed upon reference to Fig. 1, the pointer of the hand 53 which is adjacent to the inner circle or graduations 73 is arrested at the mark denoting "26," while the small hand 54 is arrested at a point about one-quarter of the distance between the numerals "1" and "2" of the inner circle or graduations 75, the position of the said hand 54 denoting that the total price to be charged is something more than one dollar and the position of the hand 53 along the inner circle 73 denoting just the proper fraction of the dollar represented by the advance the small hand 54 has made beyond the numeral "1." The inner circle of dollar-graduations or numerals 75 extend up to four dollars, (\$4.00,) and the inner circle of graduations 73 extend in cents up to one dollar, and hence with every complete revolution of the hand 53 along the series of graduations 73 the hand 54 will move sufficiently to denote one dollar. In view of this condition the hand 53 may make four entire revolutions along the series of graduations 73 while the small hand 54 is traveling the length of the inner series of graduations 75. The upper series of numerals along the rate scale-plates 70 are intended for coöperative use with the aforesaid inner series or circle of graduations 73 and inner series of graduations 75, and by preference the said numerals along the upper edge of the rate scale-plates 70 and the numerals along the said series of graduations 73 and 75 will be printed in black or in some other uniform color for convenience in guiding the operator in properly reading the indicating mechanism.

The numerals along the lower edge of the rate scale-plates 70 will be utilized in coöperation with the outer series or circle of cent-graduations 72 and the outer series of dollar-graduations 74, and for convenience the numerals along said series of graduations 72 and 74 and along the lower edge of the rate scale-plates 70 will be printed in red or other uniform color contrasting with the color of the series of numerals or graduations 73 75. If the price per pound of the merchandise to be weighed should under the construction shown in the drawings be greater than forty cents, (\$0.40,) the operator would, while shifting the indicating-dial casing 50 and vertical rack-bar member 44, direct his attention to having the lower pointers 66 move to the correct nu-

meral along the lower edge of the rate scale-plates 70 and pay no attention whatever to the numerals along the upper edge of the rate scale-plates 70. If, for instance, the price per pound of the merchandise to be weighed should be forty-two cents, (\$0.42,) the indicating-dial mechanism 50 will be shifted along the top of the casing 22 until the pointers 66 arrive at the marking denoting "42" at the lower edges of the rate scale-plates 70, and thereupon the operator after placing the merchandise upon the platform 20 would move the weight-poise 16 along its beam 15 to the proper position to indicate the weight of the merchandise, and then to determine the total price (two dollars and fifty-two cents) to be charged for the merchandise thus weighed the operator would look at the position of the hands 53 54 along the outer circles or series of graduations 72 and 74, finding the amount in dollars along the series of graduations 74 and the amount in fractions of a dollar (or cents) along the series of graduations 72, the hands 54 pointing out the amount of dollars and the hands 53 denoting that part of the amount represented in fractions of a dollar, or cents. Thus it will be plain that the inner series of cent-graduations 73 and inner series of dollar-graduations 75 are employed in connection with the upper series of numerals along the rate scale-plates 70 and that the outer series of cent-graduations 73 and outer series of dollar-graduations 74 are used in connection with the lower series of numerals on the rate scale-plates 70. With every half-revolution of the hands 53 along the outer series of numerals 72 the hands 54 will denote one dollar on the outer series of dollar-graduations 74, which extend from zero to eight dollars, (\$8.00,) and the hands 53 will make four complete revolutions, while the small hands 54 travel to the eight-dollar mark on the outer series of graduations 74.

It has been mentioned above that the lower series of graduations on the rate scale-plates 70 may be omitted, and it is obvious that this is true in all cases in which it may only be desired to use the one series of graduations 73 and one series of graduations 75 on the indicating-dials 52; but I consider it convenient to employ the two sets of numerals on the rate scale-plates 70 and the two sets of indicating-numerals on the indicating-dials 52, since by reason thereof the scales are given a maximum capacity with the minimum amount of shifting action in the indicating-dial casing 50. In instances in which it is not desired, however, to use the double set of indicating-numerals on the dials 52 the said rate scale-plates 70 may be elongated to increase their capacity beyond the extent indicated in the drawings and the slot 25 in the top of the casing 22 correspondingly elongated, so as to permit of a more extended shifting movement of the indicating-dial casing 50 in accordance with the then length of the rate scale-plates 70.

It would seem that the operation of the

scales made the subject of this application may be sufficiently understood from the foregoing description without further detailed explanation. The operation may, however, be very briefly summed up. The attendant or operator will, knowing the price per pound of the merchandise to be sold, shift the indicating-dial casing 50 and rack-bar member 44 along the rate scale-plates 70 to the proper position denoting such per-pound price, and thereupon he will place the merchandise upon the platform 20 and then move the weight-poise 16 along the beam 15 to determine the number of pounds and fractions thereof in said merchandise. The merchandise having been weighed upon the platform 20, the attendant or operator need simply read the total price for such merchandise from the indicating dial or dials 52. The shifting of the indicating-dial casing 50 results in the movement of the vertical rack-bar member 44 to the correct position with relation to the pivot-point 41 of the lever-bar 40, and the movement of the weight-poise 16 along its beam results in the slide-bar 29 being carried to the proper position along the lower edge 46 of the lever-bar 40 to effect the proper elevation of the vertical rack-bar 44 to drive the indicating-hands 53 54 to their proper position to represent in dollars and cents the total price to be charged for the merchandise.

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

1. In computing or price scales, the weight-beam, the weight-poise thereon, and the indicating-dial having a hand and series of graduations along which the said hand may travel, combined with means for actuating said hand and operable from and by the movement of said weight-poise along its beam, said dial and its parts being adapted to be shifted to control the extent of travel of said hand in accordance with the price per pound of the merchandise to be weighed; substantially as set forth.

2. In computing or price scales, the weight-beam, the weight-poise thereon, and the indicating-dial having a hand and series of graduations along which said hand may travel, combined with a series of graduations forming the rate-per-pound scale, a pointer movable with said dial to travel along said rate-scale to guide the operator, and means for actuating said hand and operable from and by the movement of said weight-poise along its beam, said dial and its parts being adapted to be shifted in position in accordance with the per-pound rate and thereby control the extent of travel of said hand; substantially as set forth.

3. In computing or price scales, the weight-beam, the weight-poise thereon, the total-price-denoting dial independent of said poise and adapted to be moved to various positions in accordance with the per-pound prices, and the hand or pointer for said dial, combined with means intermediate said poise and said

hand for imparting motion to said hand from and by the movement of said poise, the extent of such motion being governed by the position of said dial; substantially as set forth.

4. In computing or price scales, the weight-beam, the weight-poise thereon, the double series of graduations forming the upper and lower rate-per-pound scale, the total-price-denoting dial adapted to be moved to the various positions in accordance with the per-pound prices and having the inner and outer series of graduations, the hand or pointer adapted to travel along both said series of graduations, and the pointers movable with said dial for use in connection with said rate-scale to guide the operator in moving said dial, combined with means intermediate said poise and said hand for imparting motion to said hand from and by the movement of said poise, the extent of such motion being governed by the position of said dial; substantially as set forth.

5. In computing or price scales, the weight-beam, the weight-poise thereon, the rate-per-pound graduation or scale, the total-price-denoting dial adapted to be shifted or moved to the various positions in accordance with the per-pound prices and having the inner and outer circles of cent and dollar graduations respectively, and the hands or pointers to respectively travel along said circles of cent and dollar graduations, combined with means intermediate said poise and hands for imparting motion to said hands from and by the movement of said poise, the extent of such motion being governed by the position of said dial, and said hands with their graduations being respectively to denote the total prices based on the per-pound prices at different portions of said rate-scale; substantially as set forth.

6. In computing or price scales, the weight-beam, the weight-poise thereon, indicating-dial mechanism having an actuating member, and a movable member connected with the weight-poise so as to move therewith, combined with an intermediate member between said actuating member and said movable member and adapted to transmit the action of the latter to said actuating member, said dial mechanism and actuating member being adjustable along said intermediate member to control the extent of the action of the latter on said dial mechanism; substantially as set forth.

7. In computing or price scales, the weight-beam, the weight-poise thereon, the total-price-denoting dial independent of said poise and adapted to be moved on a line parallel with the said weight-beam to various positions in accordance with the per-pound prices, and the hand or pointer for said dial, combined with means intermediate said poise and said hand for imparting motion to said hand from and by the movement of said poise, the extent of such motion being governed by the position of said dial; substantially as set forth.

8. In computing or price scales, the weight-beam, the weight-poise thereon, indicating-dial mechanism having an actuating member, and a movable member connected with the weight-poise so as to move therewith, combined with an intermediate pivoted member between said actuating member and said movable member and adapted to transmit the action of the latter to said actuating member, said dial mechanism and actuating member being adjustable along said intermediate member to control the extent of the action of the latter on said dial mechanism; substantially as set forth.

9. In computing or price scales, the weight-beam, the weight-poise thereon, indicating-dial mechanism having an actuating member, and a movable member connected with the weight-poise so as to move therewith, combined with the yielding intermediate member having the longitudinally-curved surface and disposed between said actuating member and said movable member and adapted to transmit the action of the latter to said actuating member, said dial mechanism and actuating member being adjustable along said intermediate member to control the extent of the action of the latter on said dial mechanism; substantially as set forth.

10. In computing or price scales, the weight-beam, the weight-poise thereon, indicating-dial mechanism having an actuating member, and a movable member connected with the weight-poise so as to move therewith, combined with the pivoted intermediate member having a tramway to engage said actuating member and provided with the longitudinally-curved surface to be engaged by said movable member for operating said actuating member, said dial mechanism and actuating member being adjustable along said intermediate member to control the extent of the action of the latter on said dial mechanism; substantially as set forth.

11. In computing or price scales, the weight-beam, the weight-poise thereon, and the indicating-dial mechanism comprising the series of graduations and the hand therefor, com-

bined with an operating-bar intermediate said poise and said hand and having the longitudinally-curved surface, means for actuating said bar during the movement of said poise, and means for transmitting the motion of said bar to said hand, said longitudinally-curved surface being utilized to secure a uniform motion to said hand during the travel of said poise; substantially as set forth.

12. In computing or price scales, the weight-beam, the weight-poise thereon, indicating-dial mechanism having the vertical-rack-bar-actuating member provided with a roller on its lower end, and a movable or slide-bar member connected with the weight-poise so as to move therewith and provided with an upwardly-projecting roller, combined with the lever-bar intermediate member having on its side the tramway for the roller of said actuating member and on its lower edge the longitudinally-curved surface for said roller of said movable member, said dial mechanism and actuating member being adjustable along said intermediate member to control the extent of the action of the latter on said dial mechanism; substantially as set forth.

13. In computing price-scales, the weight-beam, the weight-poise thereon, and the indicating-dial mechanism, combined with means intermediate said poise and said indicating mechanism for actuating the latter by and during the movement of said poise, and comprising the pivoted arms independent of said poise and having the finger-pieces, the spring intermediate said arms to normally keep the lower ends of said arms closed together, the stop intermediate the upper ends of said arms to prevent said ends from closing unduly under manual pressure, and the flanges on said poise receiving between them the lower ends of said arms; substantially as set forth.

Signed at Arlington, in the county of Middlesex and State of Massachusetts, this 25th day of February, A. D. 1901.

ELIJAH F. SPAULDING.

Witnesses:

A. B. UPHAM,
W. W. HARRIS.