(No Model.)

G. W. TAYLOR.

REGISTERING WEIGHING SCALE.

No. 540,467. Patented June 4, 1895.

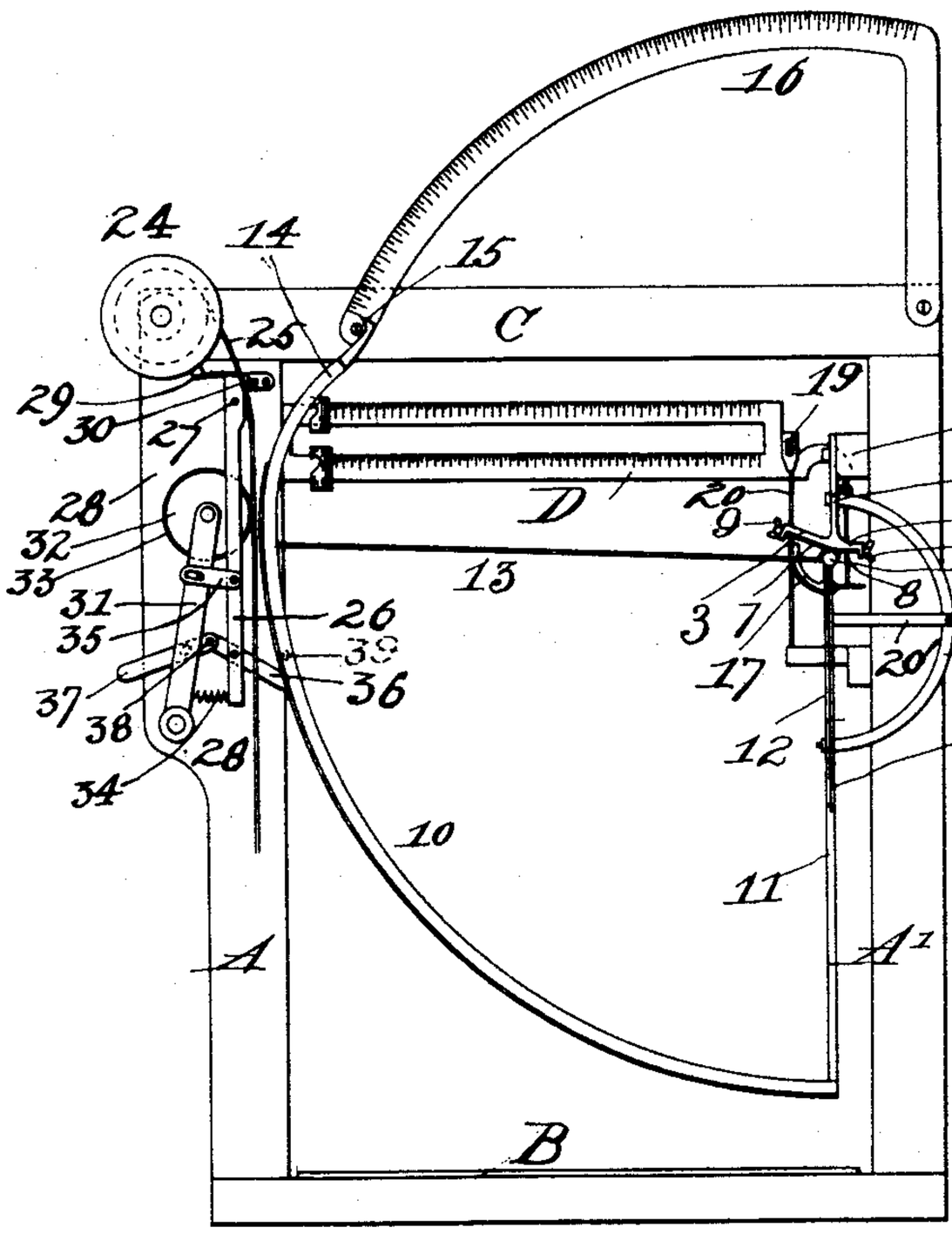

Fig. 1.

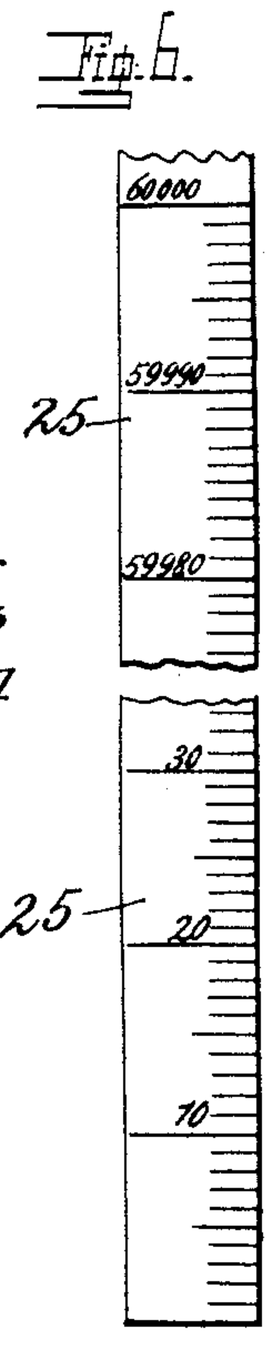

Fig. 6.

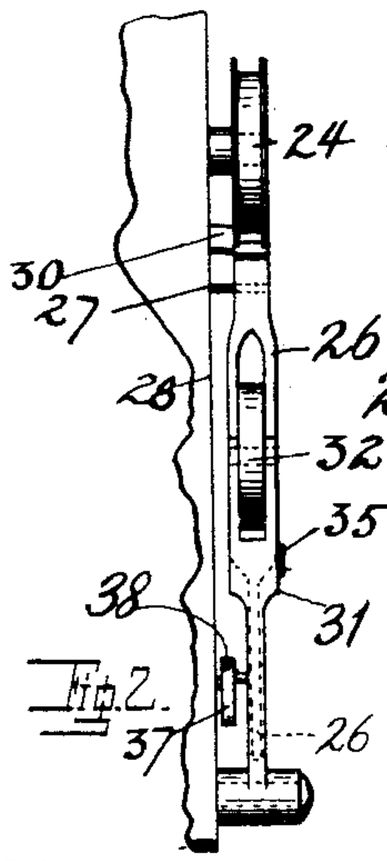

Fig. 2.

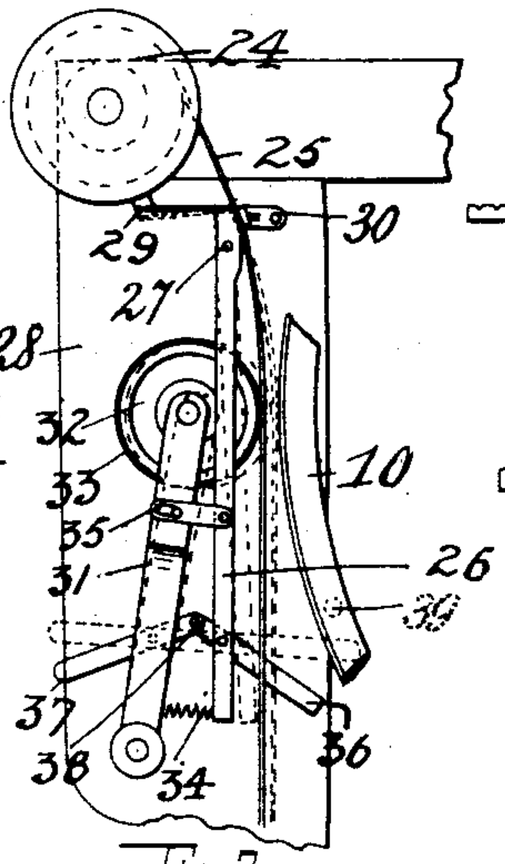

Fig. 3.

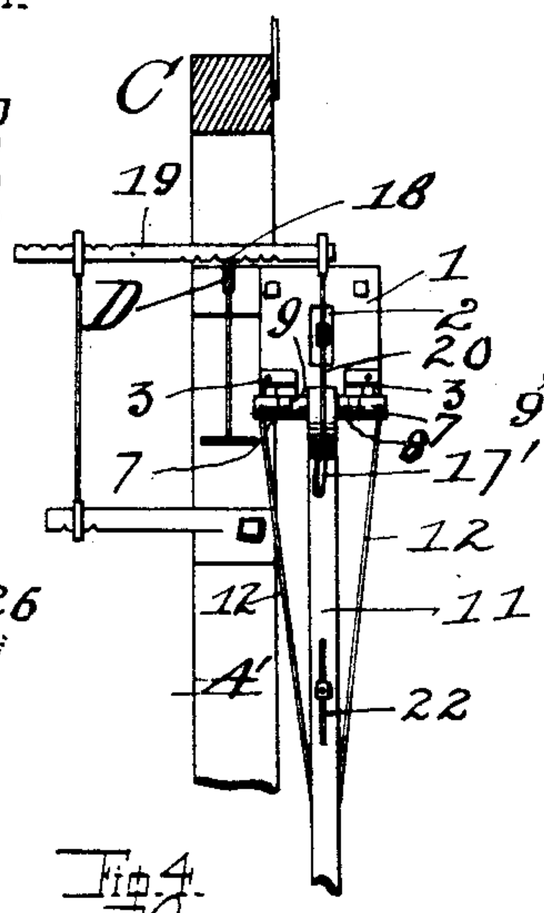

Fig. 4.

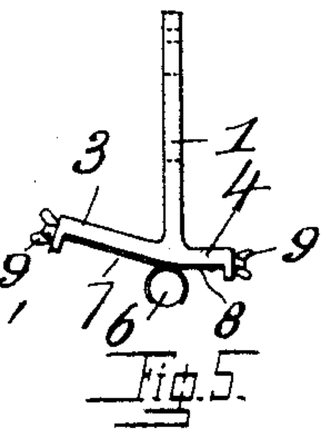

Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE W. TAYLOR, OF ATLANTA, GEORGIA, ASSIGNOR OF ONE-HALF TO ALFRED F. GREEN AND JOHN W. GREEN, OF SAME PLACE.

REGISTERING WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 540,467, dated June 4, 1895.

Application filed November 6, 1894. Serial No. 528,089. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. TAYLOR, a citizen of the United States of America, and a resident of Atlanta, in the county of Fulton and State of Georgia, have made a certain new and useful Registering Weighing-Scale; and I 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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

In the drawings, like reference marks indicating corresponding elements of construction, the device is shown as follows:

Figure 1 is an elevation of the device, showing same in normal position. Fig. 2 is a detail of the device for pressing the registering-ribbon against the segment. Fig. 3 is a detail view showing the same in release position and by broken lines in the position in which the registering-ribbon is contacted with the segment in registering. Fig. 4 is a detail in side elevation of the levers and pivoting device for the segment. Fig. 5 is a detail thereof, further showing it, and Fig. 6 is a view of the side of the tape, showing the graduations thereon.

A and A′ are the columns and B the platform of a floor scale. C is the cross-bar resting upon and connecting the said columns at their top ends and D is the beam, all of which elements may be of the ordinary construction, and indeed of any form adaptable to this device, as may also the levers, connecting rods and other appurtenances of the scale proper, or of any device wherein the draft of a weight produces motion.

A bracket 1 having a slot 2 and provided with oppositely projecting arms 3 and 4 on its lower end, preferably two of each extended parallel to each other in pairs, is secured to the post A′ in any desired manner, the construction shown being by means of an arm 5 which is secured to said column A′ and projects from its place of attachment a sufficient distance to bring the bracket 1 in the proper position. The pivot 6 of the segment rolls on the under side of the arms 3, which under surface is preferably ground and hardened for sake of uniformity of surface and equality of wear. This pivot is held in place against said surfaces by means of tapes 7 and 8 which are respectively secured to the ends of the arms 3 and 4 by means of suitable adjusting devices, screws 9 being employed for that purpose in the construction shown, and pass respectively to the side of the pivot opposite their point of connection to the ends of the said arms and are there fastened to the pivot, passing over the top side thereof and approximately one-half around same as best shown in Fig. 5. These adjusting screws 9 should be kept screwed up tight so that the tension on the taper will be such as will hold the periphery of the pivot 6 as near as possible to the under surfaces of the arms 3 and 4. The tapes should be sunk in recesses in the arms 3 and 4 whereby the pivot will be allowed to bear directly on the surfaces of the arms 3 and 4, and the tapes will not lie between said pivot and the bearing surface therefor on the arms 3 and 4.

The segment 10 is curved and set eccentrically of the pivot 6 on radii drawn as the center of said pivot rolls so that on the quarter revolution of the said segment the periphery thereof will swing equidistant from a given point in its plane of motion. An arm 11 is connected to the pivot 6 and to the lower end of the segment and braces 12 extending from the extremities of said pivot to an intermediate point of said arm brace same and dispense with extra weight without detracting from the rigidity of the arm 11. Small rods 13 of sufficient rigidity extend from the extremities of said pivot to the upper end of the said segment and retain it adjustably in its proper position. An extension 14 of the said segment carries a finger 15 which is adapted to traverse the curved and graduated scale 16 which is secured to the cross-bar C or to some other convenient part. A curved arm 17 is adjustably secured to the inner side of the arm 11 by means of a stud projecting into the slot 17′ and is curved eccentrically of the said pivot to a degree which will about produce the desired progressive augmentation of the resistance to the movement of the segment and the weight to be presently described.

A lever 19 is pivoted adjustably and lies across the knife edges 18 on the end of the beam D its free end being directly over the periphery of the curved arm 17 and a tape 20 is secured adjustably if desired to its free end and passes over the peripheral surface of the arm 17 in contact therewith, its bearing on said periphery moving nearer the center of the pivot 6 as the segment is raised in making a draft on the scale. The position of the lever 19 will not however be disturbed thereby, as the rolling of the pivot 6 will cause the tangential point of the said tape to lie at all times vertically under its free end.

An arm 20′ is secured to the outer side of the arm 11 and has its end bifurcated. A curved metallic segment 21 forming a weight is secured in a slot 22 in the said arm 11 and passes upwardly through the arm 20′, or, more properly speaking, the bifurcation thereof, where it is secured in any set position by means of a screw 23. A movement of this segment 21 up or down will respectively decrease and increase the degree of progressive augmentation of the resistance to the movement of the segment 10.

The periphery of the segment 10 is covered with rubber or some other substance adapted to increase its frictional contact. Above the periphery of said segment is mounted a reel 24 so as to revolve freely on its axis and on this reel is wound a tape or ribbon 25 which is graduated with pounds of multiples from one to a sufficiently large number to register the aggregate weight of the greatest number of drafts desired in that particular scale thereof so as to indicate by its position how much in pounds has been unreeled, each draft being added to the weights of the previous drafts, by the further unreeling of the tape.

A lever 26 is mounted on a pivoting-pin 27 set in the plate 28 secured to the column A, and extends upwardly a short distance and downwardly a sufficient distance to operate as hereinafter specified. On its upper end it carries a brake 29 which is so set as to bear upon the reel 24 when the lever is in normal position as shown in Fig. 3, and to swing away therefrom when the lever is swung forward as shown in said figure in broken lines. Also secured to the plate 28 is a pin or bracket 30 which is situated so as to co-operate with the upper end of the lever 26 in clamping the tape 25 which lies between said parts, when the lever 26 is in the position shown in the figure just mentioned, releasing said tape when the lever is in the other position mentioned. A lever 31 is pivoted by its lower end on the plate 28 and carries on its upper end a wheel 32 coated with rubber 33 which lies with its edge in a slot or opening in the lever 26 so that it may be brought into contact with the periphery of the segment 10. A spring 34 holds the lever 26 normally swung outwardly and the lever 31 inwardly and said levers are operatively joined by a slotted strap 35 so that on the retraction of the lever 26 the lever 31 will also be swung back. Toggle-elements 36 and 37 are respectively pivoted to the lever 26 and the plate 28, a pivot 38 joining their adjoining ends, and serve when staightened to press the lever 31 toward the segment 10, and are tripped by the pin 39, Figs. 1 and 3 (dotted) upon the return to its normal position of the segment 10.

The operation of this device is as follows: The draft moves the beam D upwardly as usual, which draws upwardly the tape 20 through the agency of the lever 19 and causes an upward movement of the segment, the resistance to such movement being progressively augmented by means of the eccentricity of the curved arm 17 and the curved segment 21, until it stops by balancing the weight of the draft, the finger 15 indicating the weight of that individual draft on the scale 16, whereupon the toggle elements 36 and 37 should be straightened manually which swings the lower end of the lever 26 toward the segment 10 and allows the lever 31 to incline farther in the same direction bringing the wheel 32 into contact with the tape 25 and pressing same between the rubber surfaces of said wheel and the segment 10. By the movement of the lever 26 just described the brake 29 has been taken from the periphery of the reel 24 and the engagement of the tape between the upper end of the lever 26 and the bracket 30 has been released. The article being weighed is then removed from the platform whereupon the segment will descend and by reason of the tape being pressed against its periphery, said tape will be drawn downwardly from the reel until the pin 39 shall contact with the lever 36 and allow the toggle-levers to bend, which will allow the lever 26 to be drawn back to its normal position by the spring 34, and by the end of the slot in the strap 35 move the lever 31 and hence break the contact between the wheel 32, the tape 25 and the segment 10, applying the brake 29 to the reel, and clamping the tape 25 between the upper end of the lever 26 and the bracket 30, all of which takes place instantaneously upon the breaking of the toggle levers. Inasmuch as the tape 25 is applied to the periphery of the segment while it is at rest at its elevated position and released therefrom instantaneously as soon as said segment reaches in its descent its normal position of rest only so much of the tape is drawn out as would measure the upward movement of the segment and hence the registration is perfect.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a registering weighing scale, the pivoted indicator lever, a curved eccentric arm thereon a tape lying in contact with the periphery of said curved arm and secured to the base thereof and to the scale-beam, and a curved weight adjustably mounted in a slot

in the said arm so as to be movable relatively to the pivotal point of said lever, substantially as and for the purpose specified.

2. In a registering weighing scale, a pivoted segment connected operatively with the platform means for progressively augmenting the resistance to upward motion thereof, a tape graduated with weight indications and means for holding same against said segment when it descends, for the purpose specified.

3. In a registering weighing scale, a pivoted segment connected operatively with the platform, means for progressively augmenting the resistance to upward motion thereof, a tape graduated with weight indications and means for holding same against said segment when it descends consisting of a lever and a wheel mounted thereon adapted to be pressed against said segment with the tape intervening.

4. In a registering weighing scale, a tape-reel revolubly mounted, a tape thereon and means for unreeling a length thereof proportionately equal to the draft weighed in combination with a brake lever carrying a brake-shoe bearing on said reel, a lever engaging said brake-lever and retaining same retracted and means for tripping same on the return of the scale to its normal position, for the purpose specified.

5. In a registering weighing scale, a tape-holder, means for withdrawing same therefrom in lengths equal to the draft of the scale, in combination with a bracket and a lever on opposite sides of the said tape, means for holding said lever from said bracket and of automatically applying same on the removal of the draft, for the purpose specified.

6. In a registering weighing scale, a curved segment a tape adapted to lie along the periphery thereof, a lever pivoted so as to swing to and from said segment, a second lever carrying a wheel adapted to bear upon said tape and press same against the said segment, a slotted link connecting said levers, a lever adapted to hold said levers inclined toward said segment and to be released by the return of said segment to its normal position and means for returning said levers to their normal position, substantially as and for the purpose specified.

7. In a registering weighing scale, arms disposed horizontally and secured to the frame, a pivot held in contact with the lower side of same by tapes 7 and 8 secured to and partly wound upon said pivot, their opposite ends being secured to said arms, and indicating lever secured to said pivot, a curved eccentric arm also secured thereto and a tape connected with said curved arm at the base thereof and passing over and in contact with the periphery of said curved arm and secured by its opposite end to the lever of a scale substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

GEORGE W. TAYLOR.

Witnesses:

ALBERT P. WOOD,

HARDIE L. KEITH.