No. 886,775. PATENTED MAY 5, 1908.

J. J. DUFFIE.

COMPUTING SCALE.

APPLICATION FILED NOV. 11, 1907.

2 SHEETS—SHEET 1.

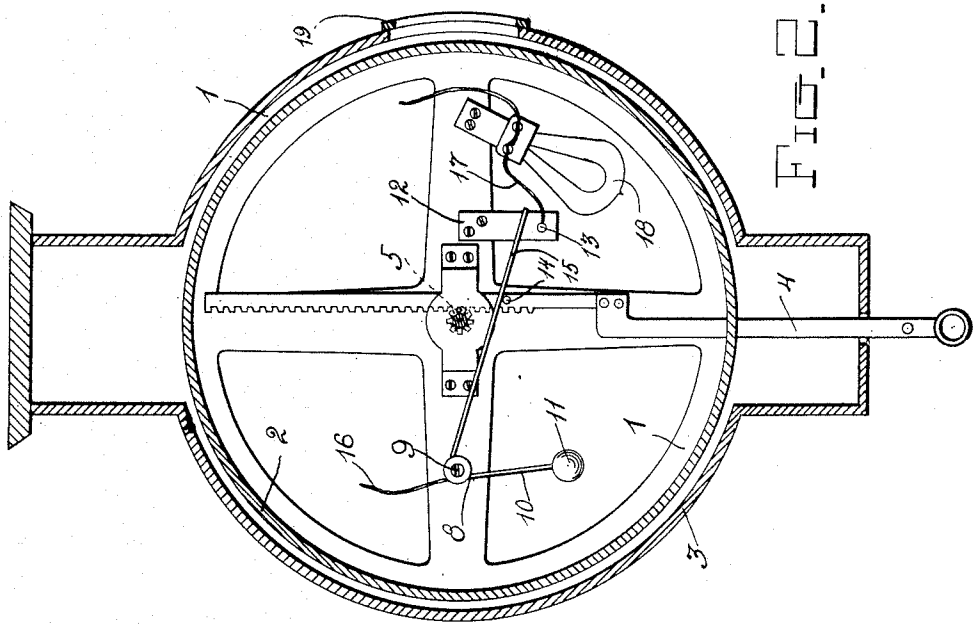


FIG. 2.

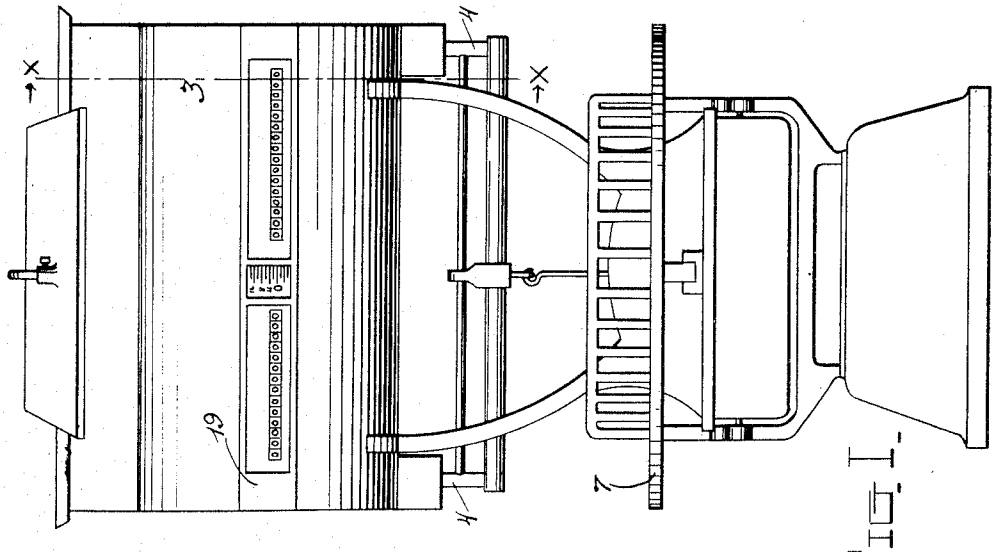


FIG. 1.

Witnesses

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2 SHEETS—SHEET 2.

FIG. 3.

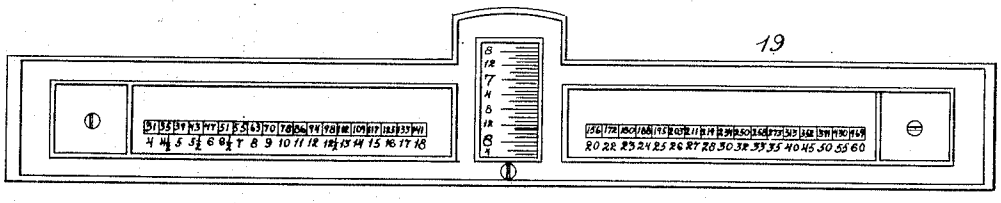
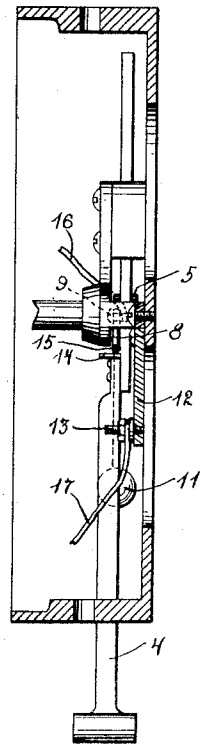


FIG. 4.



Witnesses

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COMPUTING-SCALE.

No. 886,775. Specification of Letters Patent. Patented May 5, 1908.

Application filed November 11, 1907. Serial No. 401,714.

To all whom it may concern:

Be it known that I, JOHN J. DUFFIE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Computation-Scales, of which the following is a specification.

My invention relates to improvements in computation scales, and consists in the novel construction and arrangement of its parts as hereinafter described in this specification and the claims thereunto appended.

It is well known that merchants and customers often have trouble in reading the figures printed on the cylindrical chart, or roller, near the top of the scale. This roller is usually made of paper and runs around on the inside of a metallic shell inclosing it. The weight and computing figures are printed upon this roller, and are seen by the operator through a narrow slot in the front of said metallic shell. In order to overcome the trouble of not being able to easily read the weight and computing figures that are usually placed near the top of the scale, a glass reflector, to throw the light below upon these figures where they are shown through the slot, is placed above the scale, but this reflector does not sufficiently remedy the trouble, and the fact is that on a dark day, or at night, even with the aid of such reflector, it is difficult, or impossible to read said figures. In order to overcome this trouble, I put one, two or more electric lights at the end, or ends, of said roller inside of the metallic shell; the light shining through said roller and through the slot in the metallic shell brings out all of the figures with striking clearness, and enables the operator to read said figures readily, even in a dark corner, or at night.

With the use of my invention the manufacturers of scales can make the figures smaller, thereby increasing the weighing and computing capacity.

In the accompanying drawings, Figure 1, is an elevation of a pair of computation scales. Fig. 2, is a cross sectional view of Fig. 1, on the line *x x*. Fig. 3, is an enlarged face view of the slotted plate of the shell, showing the weight measures and computing figures through the slot. Fig. 4, is a cross sectional view of one of the end frames which carry the paper roller, shell and internal mechanism.

Similar numerals refer to similar parts throughout the several views.

In describing my invention I read the drawings from left to right.

In the accompanying drawings, the numeral 1, represents a stationary, circular frame, in which a paper roller 2, turns around inside of the shell 3; 4, represents a ratchet shaft, which works up and down on a cog-wheel 5, shown in dotted lines. This cog-wheel 5, is journaled in the center of said stationary, circular frame, on an axle operated by means of the ratchet shafts 4, one at each end of the roller, which revolve said paper roller 2, which roller indicates the amount of weight upon the scale, and at the same time computes the value of the article being weighed. Said shafts 4, are connected with the platform 7, of the scale, so that any weight upon the platform will pull down said shaft and at the same time revolve the roller; there are two spiral springs, not shown in the drawings, one at each end of the scale, for elevating the platform.

The numeral 8, represents a wire, or bar, bent or coiled around a screw or projection 9, secured to the inner face of the frame 1. Attached to the lower end 10, of said wire, is a pendulum ball 11; 12, represents a strip of wood, fiber, hard rubber or other insulating material secured to the inner face of said frame, and to the inner face and near the lower end of said strip is secured a knob 13. From the inner face of said ratchet shafts 4, and near their lower ends, rise insulated projections 14, and when the scale is not in use they raise or suspend the other end 15, of the wire or bar 8, a little above said knob 13. Instead of insulating the projections 14, I may insulate the wire or bar at this contact; this is done so as not to allow either positive or negative current in the negative parts of the scale. As soon as weight of any kind is placed upon the platform 7, of the scales, said ratchet shafts 4, descend and let the end 15, of the wire or bar 8, come in contact with the knob 13; this is brought about by the pendulum 11, weighing down said end 15, of the wire or bar 8, and bringing it in contact with said knob 13. Running from said screw 9, is an electric wire 16, and running from said knob 13, is another electric wire 17.

These wires connect with an electric power. Connected with said electric wire 17, is an electric light bulb 18. There may be several of these bulbs connected to these wires at the ends of said paper roller, if desired, and in position to throw the light through the slot of the plate 19, of the shell 3, and through the "Price per lb. plate." The end 15, of the wire or bar 8, coming in contact with the knob 13, completes the circuit, lights up the globes and the figures on the paper roller and said plate, throwing them clearly out so that the operator may easily read them. As soon as the weight is taken from the platform of the scale, said ratchet shafts 4, being freed from weight are raised, and the projections 14, raise the ends 15, of the wires or bars 8, from the knobs 13, and thereby break the electric circuit, and the light goes out. Thus, the light is only lighted when some weight is upon the platform of the scales. It is only necessary, however, to have this electric mechanism at one end of the paper roller, because the wire 17, may be carried from the bulb 18, to any part of the scale and contacted with electric light globes. I have found by actual experiment that this invention will produce a light inside of said roller when an article not exceeding $\frac{1}{8}$ of an ounce in weight is put upon the platform.

The mechanism of this particular improvement is adapted to operate with the computing scale known as the "Money weight scale," but I claim the right to change the mechanism of my invention to adapt it to produce on the inside of any scales where it can be so adapted, a light, the genius of my invention being a device whereby light may be produced on the inside of the roller of a pair of computing scales, no matter of what make.

Although I have specifically described the combination, construction and arrangement of the several parts of my invention I do not confine myself particularly to such combination, construction and arrangement, as I claim the right to make such changes and modification therein as may clearly fall within the scope of my invention, and which may be resorted to without departing from the spirit, or sacrificing any of my patentable rights therein.

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

1. In combination with an automatic computing scale the circular end frame 1, an insulated screw 9, secured to the inner face of one side of the end frame; a strip of insulating material 12, secured to the inner face and other side of said frame; a knob 13, secured to the lower end of said strip; an electric light bulb 18, secured to the face of said frame and to the right of said strip; a ratchet shaft 4, adapted to move up and down in said frame; a projection 14, rising from said ratchet shaft to the left of said strip; a wire 8, bent around said screw 9, one end 10, extending downwardly and having secured on its lower end a pendulum ball 11, the other end 15, of said wire passing to the right, resting on the projection 14, and poised a little above the knob 13, a wire 16, passing upwardly from wire 8, and a wire 17, passing from knob 13, to electric light bulb 18, and then upwardly, said last mentioned wires connected with an electric power, the electric current adapted to be contacted and broken by the movement of the platform of the scales, thereby producing a light inside of the computing roller 2, substantially as shown and described and for the purposes set forth.

2. In combination with an automatic computing scale having a revolving roller, a slotted shell protecting said roller; a slotted plate secured to said shell over its slot, with mechanism for operating said roller as shown; an electric light bulb situated at the end of said roller in position to throw a light through the slots of said shell and plate; a wire 17, connected with said electric bulb and knob 13; a wire 16, connected to an electric power, wire 8 and screw 9, and a weight mechanism adapted to produce contact between the wires 16 and 17, substantially as shown and described and for the purposes set forth.

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

JOHN J. DUFFIE.

Witnesses:
C. L. KNAULTON,
CHAS. T. STANLEY.