

April 2, 1929.

J. PFEIFER

1,707,683

COMPUTING SCALE

Filed Feb. 4, 1927

2 Sheets-Sheet 1

Fig. 1.

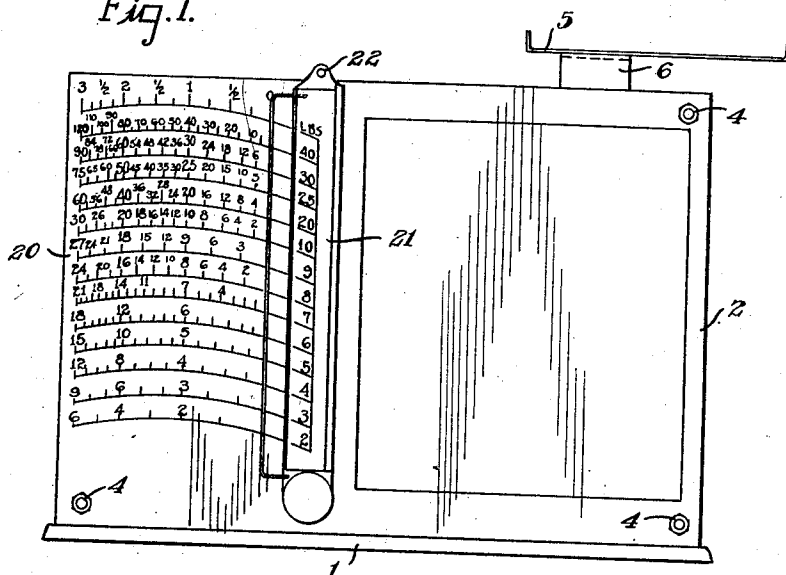


Fig. 2.

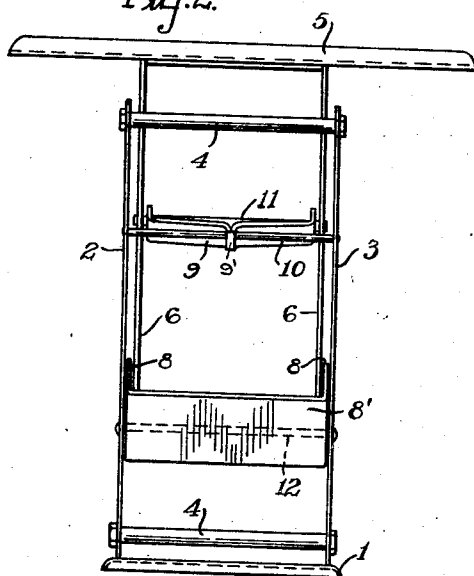
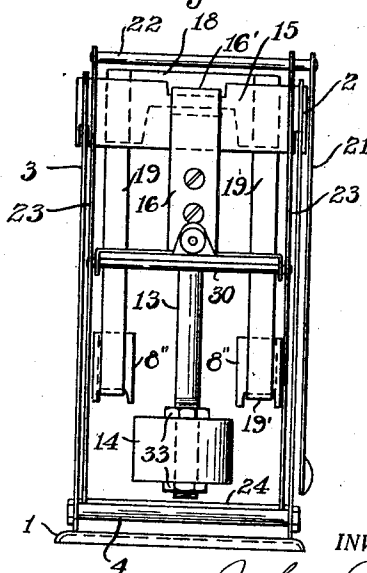


Fig. 3.



INVENTOR.

BY *John Pfeifer*
Staley & Orlok
ATTORNEYS.

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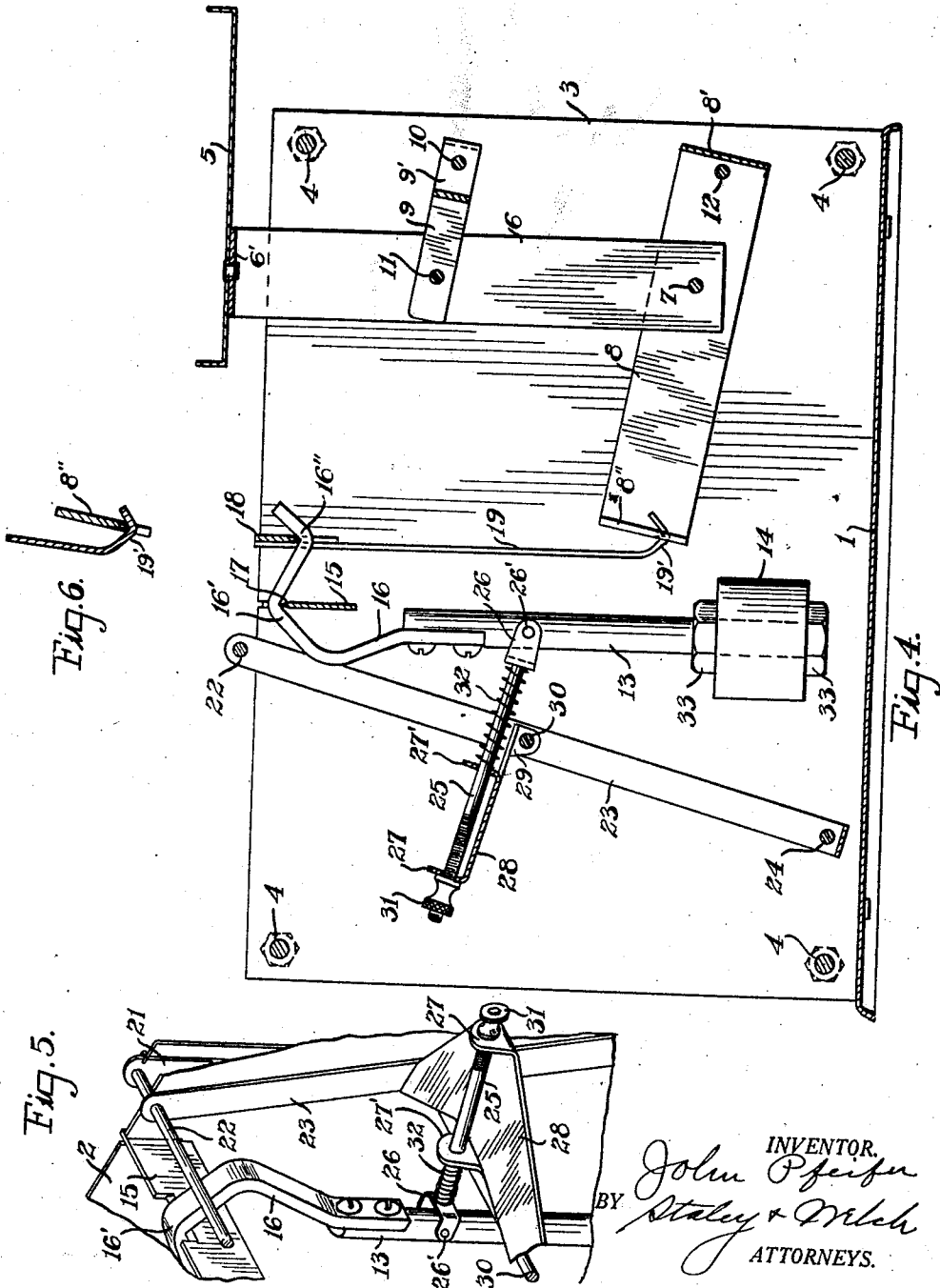
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COMPUTING SCALE

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2 Sheets-Sheet 2



INVENTOR.
John Pfeifer
BY Staley & Welch
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN PFEIFER, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-THIRD TO WILLIAM G. GRIM, OF SPRINGFIELD, OHIO.

COMPUTING SCALE.

Application filed February 4, 1927. Serial No. 165,914.

This invention relates to improvements in automatic scales, it relating more particularly to computing scales of the pendulum type.

The object of the invention is to provide a scale of the character referred to which will be simple in construction, economical in manufacture and effective in operation.

A further object of the invention is to provide a price chart and indicator therefor in which the indicator is so arranged that it stands normally in perpendicular position with the various indications on the chart likewise arranged perpendicular whereby the indications are more readily read and whereby the indicator may be used as a plumbing device for leveling the scale.

Another object of the invention is to provide an arrangement for mounting and operating the pan which will eliminate binding of the parts.

Another object of the invention is to provide a simple and effective arrangement for mounting the indicator and connecting the same with the pendulum whereby the indicator may be accurately adjusted.

Another object of the invention is to provide a simple arrangement for applying the load to the pendulum, including a peculiar formation of the fulcrumed end of the pendulum.

Further objects will be apparent from the accompanying drawings, description and claims:

In the accompanying drawings:

Fig. 1 is a front elevation of a scale embodying the improvements.

Fig. 2 is an elevation of the right hand end of the machine as viewed in Fig. 1.

Fig. 3 is an elevation of the left hand end of the machine as viewed in Fig. 1.

Fig. 4 is a longitudinal section.

Fig. 5 is a perspective view of a portion of the mechanism shown in Fig. 4.

Fig. 6 is a detail of the parts shown in Fig. 4.

Referring to the drawings, 1 represents the base, 2 and 3 respectively the front and rear supporting plates preferably formed of sheet metal, and 4 a series of tie rods connecting the plates together; the lower edges of the

supporting plates being connected to the base in any suitable manner. The pan 5 of the scale is riveted or otherwise secured to the upper transverse cross piece 6' of a U-shaped supporting standard, the vertical legs of which are indicated at 6. The lower ends of the legs 6 are perforated to loosely receive the rod 7 which serves to pivot the standard to the side arms 8 of a yoke-shaped lever, the connecting portion of which is indicated at 8'. A yoke-shaped member 9 having its cross-piece bent to form a centrally-arranged ear 9', pivoted to the side frame members by the rod 10 and having its side arms pivotally connected to the legs 6 by the rod 11, serves to maintain the pan and its supporting legs 6 in upright position. The arms 8 of this lever adjacent the portion 8' thereof are pivoted on a transverse rod 12 which is supported in the side frame members 2 and 3. By this method of supporting the pan, it will be noticed that there are three pivotal points, i. e., the connection of the ear 9' with the rod 10 and the connections of the arms 8 with the rod 12, which permits the parts to swing without binding but at the same time maintains the standard 6 in a vertical plane so as to maintain the pan in a horizontal position. It has been found in practice that by off-setting the to an inverted V form as indicated at 16' tendency of the parts to bind in moving is further eliminated, providing the pan is offset in the manner illustrated in the drawing, that is, with its greater portion at the right of the standards as viewed in Fig. 1.

A rod 13 having a weight 14 connected with its lower end forms a pendulum, this pendulum being suspended from a cross member 15, supported by the side walls 2 and 3, through the medium of an extension 16 which is bent to an inverted V form as indicated at 16' with the apex of the V resting upon a knife edge bearing 17 formed on the upper edge of the cross member 15. The extension 16 is further extended and provided with a second V-shaped portion 16'' to receive a knife edge formed on a cross piece 18 secured to the upper ends of a pair of straps 19, the lower end of each of which is bent to a V form as indicated at 19' to receive knife edges

formed upon the lower edges of inturned projections 8" on the inner ends of the lever arm 8.

Formed on the front supporting plate is a chart 20 bearing indications representing the price totals and weights and adapted to move over this chart is a pointer 21 bearing price-per-pound indications. The pointer is pivoted at its upper end on the forward end of a transverse rod 22 which is carried on the upper ends of two arms 23 of a yoke-shaped lever, the lower end of which is pivoted on the cross rod 24 carried by the side frame members. This lever 23 is connected with the pendulum 13 by a connection which can be lengthened or shortened to allow for the proper adjustment of the pointer. To that end a rod 25 has a yoke 26 which straddles the pendulum rod 13 and is pivotally connected with the rod 13 by the pin 26' and is extended loosely through apertures in a pair of ears 27 and 27' upturned from the plate 28, which has downturned ears 29 pivoted upon a rod 30 extending between and carried by the lever arms 23. The rod 25 is threaded and has a nut 31 adapted to bear against the ear 27, and there is a coil spring 32 placed about the inner portion of the rod 25, interposed between the ear 27' and the yoke 26, which serves to hold the plate 28 against the nut. By turning the nut, the arms 23 can be swung to or fro to thereby bring the left hand edge of the pointer in line with the zero indications of the chart.

For the purpose of adjusting for correct weight, the lower end of the pendulum rod 13 is threaded to receive nuts 33 between which the weight 14 is placed so that this weight can be adjusted to or from the fulcrum point of the pendulum.

By the arrangement described, a very simple scale is provided which can be economically manufactured. Practically all of the parts, including the base, side frame members yokes and levers are constructed of sheet metal thus enabling the device to be very cheaply manufactured. By the arrangement of the pointer described, the pointer stands in a perpendicular position so that it can be used as a plumb for the purpose of leveling the machine, and, further, by having the indicating marks also arranged perpendicular, this enables the indications to be easily read.

Having thus described my invention, I claim:

1. In an automatic price scale, an indicator pivotally hung from its upper end so as to normally stand in a perpendicular position, a chart having perpendicular indication marks, automatic means for moving said indicator over said chart by the weight of the commodity, and an adjustable connection between said indicator and automatic means.

2. In an automatic price scale, a pivoted lever, an indicator pivotally hung from said

lever so as to normally stand in a perpendicular position, automatic means for moving said indicator by the weight of the commodity, and adjustable connections between said lever and said automatic means.

3. In an automatic price scale, a pivoted lever, an indicator pivotally hung from said lever so as to normally stand in a perpendicular position, an automatic means including a pendulum for moving said indicator by the weight of the commodity, and an adjustable connection between said lever and said pendulum.

4. In an automatic price scale, a pivoted lever, an indicator pivotally connected with said lever so as to normally stand in a perpendicular position, a fulcrumed pendulum, a second lever, means pivotally connecting said second lever with the fulcrumed end of said pendulum, a commodity pan supported upon said second lever, and an adjustable connection between said first mentioned lever and said pendulum.

5. In an automatic price scale, a pivoted lever, an indicator pivotally connected with said lever so as to normally stand in a perpendicular position, a fulcrumed pendulum, a second pivoted lever, means pivotally connecting said second lever with the fulcrumed end of said pendulum, a standard pivotally mounted on said second lever, a pivoted link pivotally connected with said standard to maintain the same in an upright position, a commodity pan on said standard, and an adjustable connection between said first mentioned lever and said pendulum.

6. In an automatic scale, a supporting frame, a yoke-shaped lever having each of its arms pivotally supported by said frame, an inverted U-shaped standard having each of its legs pivotally connected with said lever, a yoke-shaped link having its arms pivotally connected with the legs of said standard and also having a centrally arranged ear pivotally connected with said frame, a pan supported on the upper end of said standard in off-set relation thereto, a movable indicator hand, and connections between the free end of said lever and said indicator.

7. In an automatic scale, a supporting frame, a yoke-shaped lever having its arms pivotally connected with said frame, and an inverted U-shaped standard pivotally supported by said lever, a link pivotally connecting said standard with said frame, a pendulum fulcrumed upon said frame having a short arm and a weighted long arm, a link connection between said yoke-shaped lever and the short arm of said pendulum, a second yoke-shaped lever having its lower end pivotally connected with said frame, an indicator pivotally hung from the upper end of said lever, and an adjustable connection between said lever and the long arm of said pendulum.

8. In an automatic scale, a pendulum op-

erable by the weight of the commodity, a piv-
oted lever, an indicator pivotally connected
with said lever, and a connection between said
lever and said pendulum consisting of a mem-
ber pivotally connected with said lever, a rod
5 pivotally connected with said pendulum and
passing through a pair of apertured ears on
said member, a nut threaded on said rod for
engagement for one of said ears, and a spring
interposed between the outer of said ears and
the inner end of said rod. 10

In testimony whereof, I have hereunto set
my hand this 26th day of January, 1927.

JOHN PFEIFER.