No. 801,016. PATENTED OCT. 3, 1905.

J. R. JOHNSON.

COMPUTING SCALE.

APPLICATION FILED JULY 19, 1905.

Fig. 1.

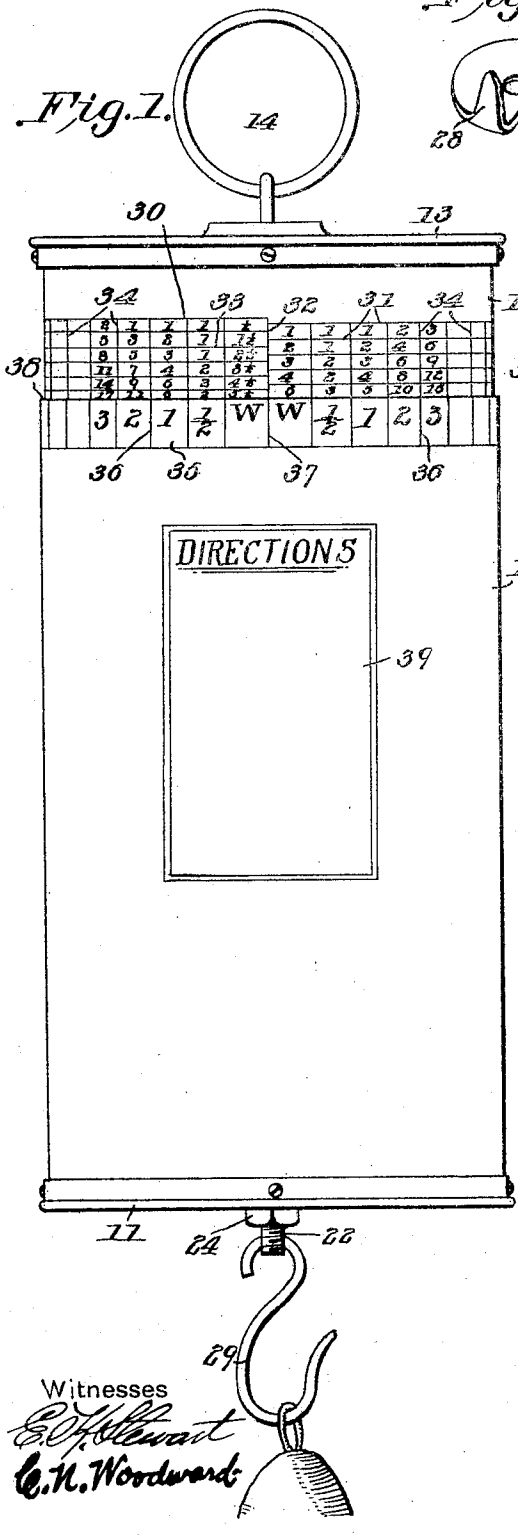


Fig. 3.

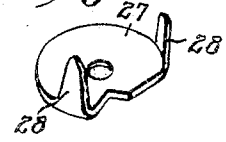


Fig. 2.

Witnesses

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JOHN ROBERT JOHNSON, OF PONTIAC, ILLINOIS.

COMPUTING-SCALE.

No. 801,016. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed July 19, 1905. Serial No. 270,410.

To all whom it may concern:

Be it known that I, JOHN ROBERT JOHNSON, a citizen of the United States, residing at Pontiac, in the county of Livingston and State of Illinois, have invented a new and useful Computing-Scale, of which the following is a specification.

This invention relates to the class of scales whereby the weight and the price per pound or fractions of pounds or other units of weight of the articles weighed are indicated, and has for its object to simplify and improve the construction and increase the efficiency and utility of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a vertical sectional elevation. Fig. 3 is a perspective view of the spring-supporting clip detached.

Like characters of reference indicate corresponding parts in all of the figures of the drawings.

In the improved device is comprised an outer casing or shell 10, closed at the lower end 11, and an inner casing or shell 12, closed at the upper end 13 and provided with a swiveled supporting-ring 14. The inner casing is slidably disposed within the outer casing and is provided with guide-lugs 15 16, through which guide-rods 17 18, attached to the bottom portion 11 of the outer casing-shell, extend. By this simple means the outer casing is movable vertically over the inner casing, but is held from rotation thereon by the coaction of the rods and lugs.

Depending from the bottom of the upper portion 13 of the inner shell 12 are spaced ears 19, from which the balance-spring 20 is suspended, as by a pin 21, the lower end of the spring connected to a threaded stem 22, passing downwardly through the bottom 11 of the shell 10 and secured adjustably thereto, as by nuts 23 24.

The stem 22 is provided with a head 25 at the upper end, and supported beneath the head, as by a nut 26, is a plate 27, the plate extending between the lower coils of the spring 20 and provided with spaced ears 28 for bearing against the outer faces of the spring-coils and holding them in position. By this means the spring is firmly coupled to the stem and the latter adjustable relative to the shell 10 by means of the adjusting-nuts 23 24.

A suspension-hook 29 is connected to the lower end of the stem 22 to receive the weighing-pan or other receptacle for the goods to be weighed.

The shells 10 and 12 will preferably be cylindrical and of seamless tubing, and the inner shell will be provided with the graduations from which the various weights, prices, and other data are "read," while the outer shell will be provided with certain indicator lines and characters coöperating with the data upon the inner shell.

The matter for the inner shell will preferably be printed or otherwise placed upon a strip or strips of paper or like material and glued or otherwise attached to the inner shell, while the data for the outer shell will be similarly formed and attached.

Any required matter may be employed upon the shells and arranged in any required manner; but for the purpose of illustration an approved system of price-computing configurations are shown, which will now be described.

The sheet of paper or similar material represented at 30 is provided with two sets of horizontal lines, one set 31 spaced apart and extending to the right from a central vertical line 32 and the other set 33 spaced the same distance apart, but disposed intermediately of the lines 31 and extending toward the left from the same center line 32. The spaces between the line 31 and the strength of the spring 20 will be so graduated that each pound of weight attached to the suspension-hook 29 will cause the outer shell to move downward a distance equal to one of the spaces, the upper edge of the outer shell thus serving as an indicator. By arranging the lines 33 midway of the lines 31 it will be obvious that the same upper edge of the outer shell will indicate the half-pounds on the lines 33. Thus the upper rim of the outer shell becomes the "indicator" of the device and no other indicator is required. The sheet 30 is also divided by spaced vertical lines 34 into vertical columns. Disposed upon the upper end of the outer shell is a strip of paper or like material 35, provided with spaced vertical lines 36, corresponding to the vertical lines 34 of the sheet

30. Thus as the outer shell moves over the inner shell the lines 38 of the strip 35 follow the lines 34 of the inner shell, while a center line 37 on the strips 35 corresponds to and follows the center line 32 of the sheet 30.

In the column of spaces next to the center line 32 on the sheet 30 at the right the lines 31 are numbered "1, 2, 3," and so on, denoting pounds, and in the corresponding column at the left of the center line the "half-lines" 33 are denoted by the characters "$\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$," and so on. The remaining vertical columns at the right are supplied with figures denoting the various prices for goods of various weights by the pound, and the remaining vertical columns at the left are supplied with figures to denote the prices for half-pounds.

The vertical columns formed by the vertical lines 36 of the strip 35 are numbered "$\frac{1}{2}$, 1, 2, 3," and so on in opposite directions from the center line 37.

A limited number of the denoting-figures only are shown for the purpose of illustration; but it will be obvious that the range of the device may be extended to any desired extent.

To illustrate the operation, when there is price required for pounds and a fraction of a pound—for instance, four and one-half pounds at three and one-half cents per pound—the article to be priced will depress the outer shell until its upper rim is in line with the line 33 next below the "$4\frac{1}{2}$" mark in the weight-column. This will bring the character "3" on the strip 35 at the left opposite the character "14" in the vertical column on the sheet 30 and the "$\frac{1}{2}$" character on the strip 35 beneath the character "2" in the vertical column on the sheet 30, which, added to fourteen, makes sixteen, the price plus the odd one-half cent, as before, or in this example it is only one-fourth of one cent. In like manner the price of any required article per pound or half-pound may be readily ascertained.

It will be understood that the graduations of the lines may be varied to any required extent to denote other fractions of a pound than halves, if required.

The device is simple in construction and can be inexpensively manufactured and of any required size or capacity.

The shells 10 12 may be of any suitable metal and ornamented to any required extent. The two shells being firmly supported from lateral or rotative movement, there will be no frictional contact between them. Hence the sheet 30 may be of relatively fragile and inexpensive material, as it is protected from injury by the outer shell, and when the device is not in use the sheet having the configurations is entirely concealed and protected between the two shells.

The sheet 30 and the strip 35 may be renewed at a trifling expense when worn or soiled, and thus very materially increasing the value or utility of the device and prolonging its "life."

A tablet 39 of any suitable material will preferably be attached to the outer shell 10 for containing directions for operating the device and "reading" the various computations.

Having thus described the invention, what is claimed is—

1. A computing-scale comprising an inner shell having a vertical dividing-line and with spaced horizontal lines leading around the shell in one direction from said vertical line and spaced horizontal lines leading around the shell in the opposite direction from the vertical line and disposed intermediately of the first-mentioned horizontal lines and with vertical lines spaced apart and dividing said shell into a plurality of vertical columns of spaces, the spaces at one side of the center line carrying the price-per-pound numerals and the spaces at the opposite side of the center line carrying price-per-fractions-of-pound numerals, an outer shell slidable over said inner shell with its upper rim serving as an indicator when moved over said horizontal line of the inner shell said outer shell having spaced vertical lines corresponding to the vertical lines of the inner shell and provided with numerals in progressive order in opposite direction from the center line and a balance-spring connecting said shells.

2. A computing-scale comprising an inner shell provided with interior guide-lugs and with spaced weight-graduations an outer shell movable over said inner shell and provided with guide-rods movably engaging said guide-lugs, the upper rim of said outer shell serving as an indicator coacting with said weight-graduations and a balance-spring connecting said shells.

3. A computing-scale comprising an inner shell closed at the upper end and provided with interior guide-lugs and with spaced graduations, an outer shell closed at the lower end and movable over said inner shell and provided with guide-rods movably engaging said guide-lugs, the upper rim of said outer shell serving as an indicator coacting with said graduations, a threaded rod extending through the bottom of said outer shell, nuts engaging said rod and bearing upon the opposite sides of said bottom member and a spring connected between said rod and the inner shell.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN ROBERT JOHNSON.

Witnesses:
DON GOODALL,
I. P. MCDOWELL.