

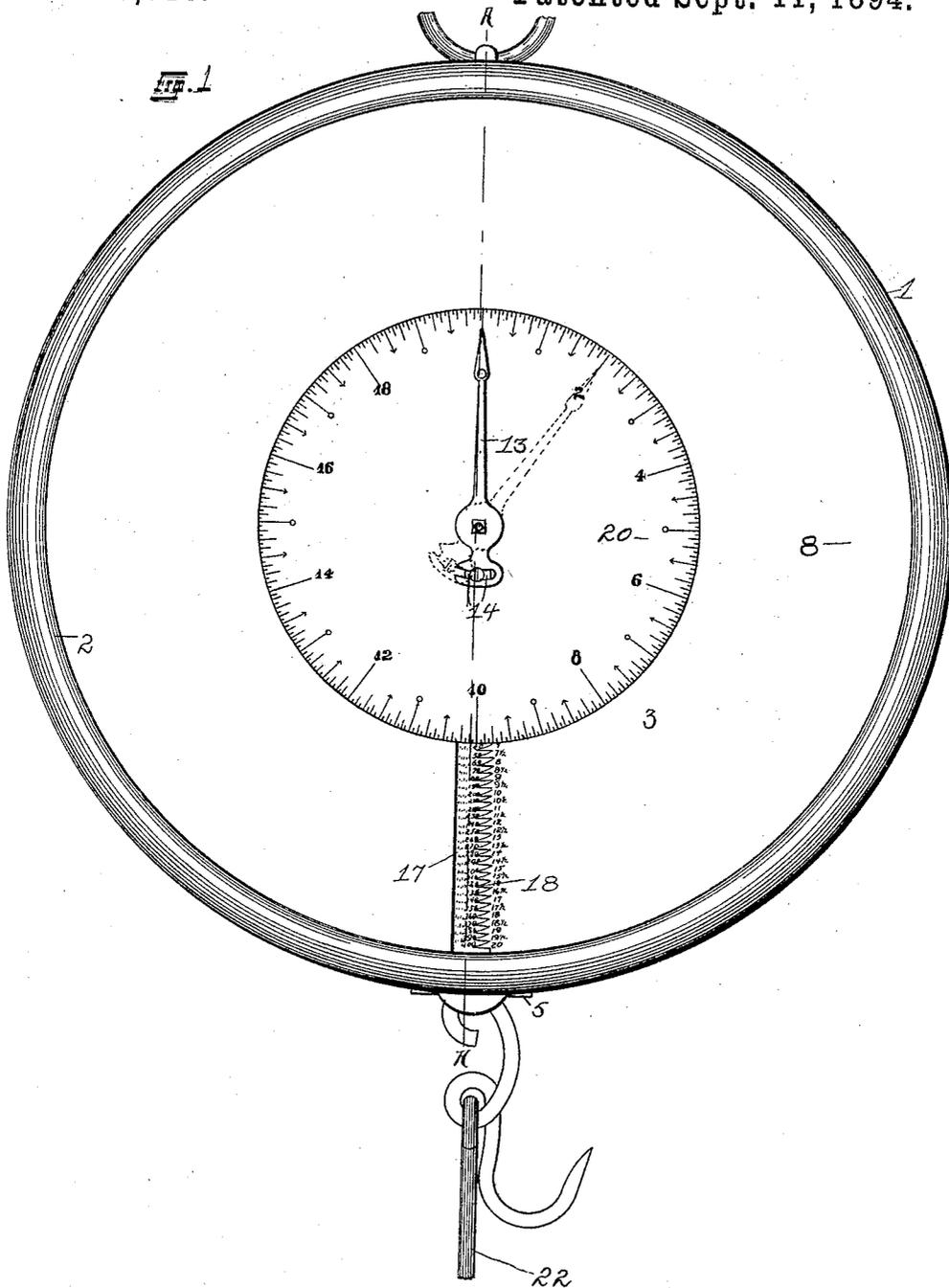
(No Model.)

2 Sheets—Sheet 1.

H. E. KNOTTNERUS. PRICE SCALE.

No. 525,910.

Patented Sept. 11, 1894.



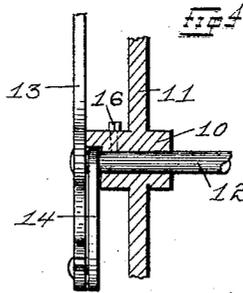
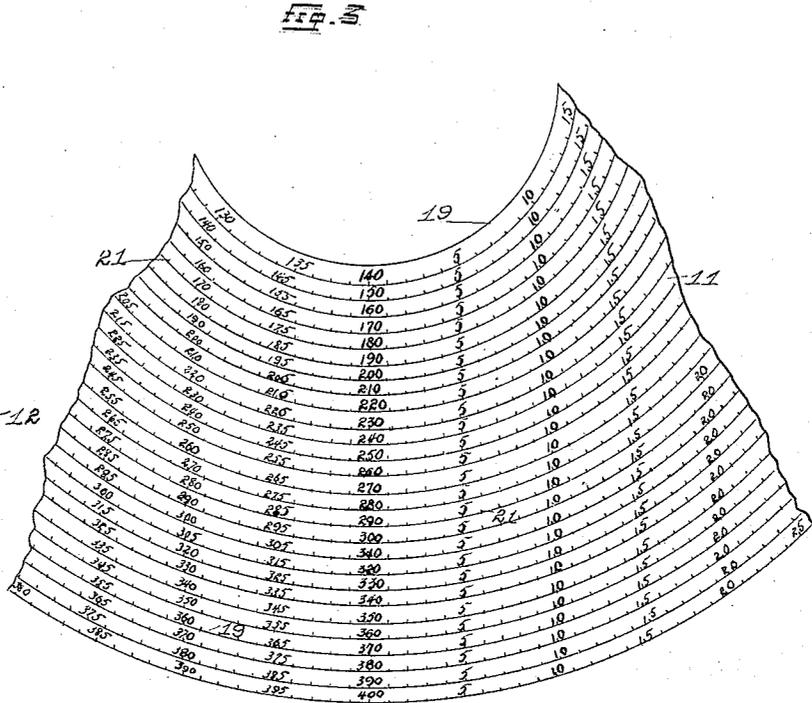
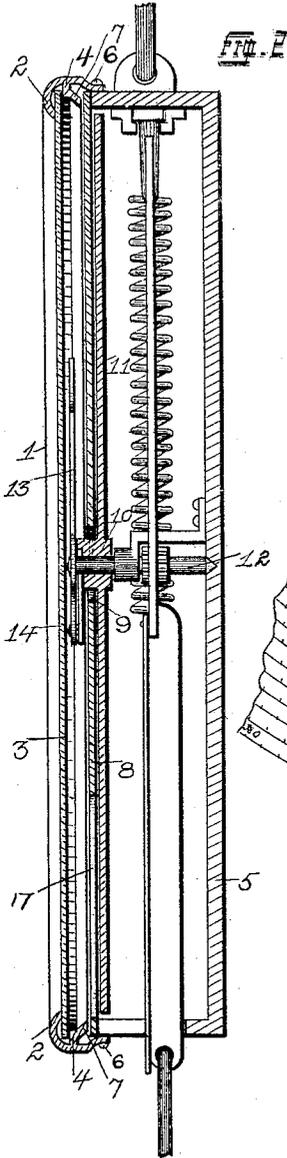
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UNITED STATES PATENT OFFICE.

HENRY EDZARDT KNOTTNERUS, OF ST. LOUIS, MISSOURI.

PRICE-SCALE.

SPECIFICATION forming part of Letters Patent No. 525,910, dated September 11, 1894.

Application filed January 28, 1893. Serial No. 460,080½. (No model.)

To all whom it may concern:

Be it known that I, HENRY EDZARDT KNOTTNERUS, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Scales and Calculators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improvement in scales and calculators and consists in the novel arrangement and combination of parts as will be more fully hereinafter described and designated in the claims.

The object of my invention is to provide an improved calculating scale, especially adapted for use of retail dealers in meats, and which shall be more simple and efficient in construction and operation than those heretofore known in the art.

In the drawings:—Figure 1 is a detail front elevation of an improved circular spring scale with my invention applied thereto. Fig. 2 is a vertical transverse sectional view taken on a line A—A in Fig. 1. Fig. 3 is a detail enlarged view of a portion of the calculating scale. Fig. 4 is a detail view showing the connection between the calculator plate and other parts, some of said parts being broken away and removed to give a clearer understanding of the construction.

Referring to the drawings: 1 indicates a circular frame, which forms the front plate of the scale. Said circular frame 1 has a peripheral inwardly extending flange 2 adapted to hold the glass 3 against the flange 4, which is also peripheral and located within the flange 2. The scale mechanism is located in an elongated rectangular casing 5, which is located vertically in the rear of the center of the scale, the frame 1 being secured to said casing 5 by screws 6. The flange 4 has a rearwardly extending peripheral projection 7, to which the dial 8 is secured, as shown in Fig. 2. The dial 2 is provided with a central opening 9 through which projects a bushing 10 and upon which and in the rear of said dial is located a calculator plate 11.

The scale mechanism is of the ordinary construction and needs no detail description except that the shaft 12 operated by the mechanism extends through and provides a bear-

ing for the bushing 10. It will now be seen that the calculator plate 11 is revoluble with the bushing 10, and coincidentally movable with an indicating pointer 13 which is rigidly fixed to the end of said shaft 12 and to the bushing 10, an adjustment being provided by the plate 14 secured to said bushing 10 and located under the pointer 13, said pointer being adjusted with relation to said plate to attain the balance necessary for the successful operation of the scale. The calculator plate 11 is therefore revoluble with the bushing 10 and the pointer 13, and these parts revoluble with the shaft 12, the connection being made by means of a set screw 16 located in the bushing 10 and engaging said shaft 12.

The dial 8 is provided with a sight opening 17 in vertical alignment with the pointer 13 when it is in its normal position at "0." One side of the opening 17 is perfectly straight while the other side is notched, forming indicating pointers 18, which serve as a guide to the different annular rows of figures upon the calculator plate 11, the matter upon said plate showing through the opening 17.

Each of the notches or pointers 18 is indicated by numerical figures representing the various prices of goods per pound, and as herein shown from "7" to "20" cents per pound, the figures representing digits and half digits, such as "7," "7½," "8," "8½," "9," "9½," &c., consecutively up to "20."

I will now proceed to describe the arrangement of the numerical figures upon the calculator plate.

In the accompanying drawings I have shown a plate with twenty-seven annular concentric lines 19, the innermost line or circle being of the same diameter as the scale 20 upon the dial plate 8. The scale 20 is divided into three hundred and twenty even graduated marks or spaces, each of which represents one ounce, this arrangement being similar to that upon the scales as now constructed. The inner line or circle 19 is divided into one hundred and forty divisional spaces, indicated by small marks 21, each of which represents one cent in value. Each successive circle has ten more marks than the preceding one, thus making the total of the succeeding circles ranging from one hundred and forty to four hundred, and the totals as placed in vertical

alignment therein appear as follows: "140" "150," "160," "170," "180" and up to and including "400" as shown in Fig. 3.

5 With the indicator 13 at "0," that is, indicating no weight at all, the same being at its normal position, the numerals "140," "150," "160," &c., appear in a vertical line through the sight opening 17 in the dial plate 8.

10 Every five points from the total aggregation "140" upon the inner circle 19 is indicated by the succeeding numerals, such as "5," "10," "15," "20," "25," &c., up to the total "140" and this is also the case with each of the circles 19, the total number of marks in-
15 creasing ten with each succeeding circle. Therefore the space indicating numerals appear in aligned rows upon the face of the plate as particularly shown in Fig. 3, that is the total appears in one line, the figure "5"
20 appears upon each circle in another line and five marks from the figure "5" appear the figures "10," and so on around the entire circle.

25 We will premise that an article is placed upon the platform hook 22, which is provided for the balance of the scale, said article weighing two pounds. The indicating pointer 13 assumes the position as indicating the two pounds mentioned, and the calculator plate 11
30 moves a corresponding distance, thus changing the line of totals, and showing up the row of marks indicated by the numeral "15," this being the case if the current price of the article is seven and one-half cents per pound. The
35 numeral "15" referred to appears in the second line or second circle, as indicated by the pointer 18 opposite, the numeral "7½" indicated upon the scale plate 8 as shown in Fig. 1. If the article weighs twenty pounds at
40 seven and one-half cents per pound, the calculator plate 11 would make a complete revolution, thus bringing the total in sight at the opening 17, and indicating the price of the twenty pounds at one dollar and fifty cents.

45 The operation is similar within the row of figures at any price, and if the article weighs any fraction over a pound, the price of same is indicated even to the cent upon the calculator plate 11.

50 Although the scale as herein shown is only graduated for twenty pounds, the same could be increased or diminished without in any way affecting the material idea of my invention, except that there would necessarily be
55 a greater or less number of circles upon the calculator plate 11, therefore greater or less totals upon the same.

60 Although I have here shown the calculator-plate 11 and the indicator in but a single position with relation to the dial 8, yet it is clear that various readings may be taken from said parts when adjusted to various different positions from that in which they are shown in Fig. 1, and I therefore do not deem it necessary to illustrate them in such various positions.
65

I am aware that a spring-scale has been

provided with a vertically moving tablet having marks upon its face indicating the price per pound and the value of articles to be weighed, the said tablet moving up and down as more or less weight is applied to the platform of the scale, but such construction does not answer the purpose of my improved calculating scale and I make no claim to such
70 75 tablet.

I am also aware that an interest calculator is well known in the art, having a revoluble disk provided with interest tables on its opposite faces and journaled between two graduated stationary circular screens provided each with a pointer or hand and a slot or window whereby the figures on opposite sides of said disk and opposite the windows can be read, but in this interest indicator said
80 85 disk or plate may be turned independent of said indicator, and it is thereby incapacitated for use as a weighing-scale and besides it is not provided for weighing mechanism, and I therefore make no claim to such.
90

Having fully described my invention, what I claim is—

1. The improved price-scale, constructed with a revoluble calculator-plate 11 having upon its face a series of annular concentric
95 lines and marks indicating the aggregate cost of the goods to be weighed, a fixed dial-plate 8 located in front of said revoluble calculator plate and provided with a sight opening 17, suitable weighing mechanism, a casing there-
100 for a pointer 13 fixed to revolve with said calculator plate and arranged in front of said dial-plate to stand normally in vertical alignment with the said sight opening of said dial-plate, and common fastenings which hold said
105 dial-plate in a fixed position with relation to said casing, substantially as herein specified.

2. The improved price scale, comprising the circular frame 1 forming the front plate of the scale, a casing 5 in the rear of said
110 front plate, weighing mechanism located in said casing, a dial-plate 8 secured upon said front plate and having a central opening 9 and provided with a sight opening 17, a revoluble calculator plate 11 having an integral
115 bushing 10 revoluble in said central opening of said dial plate located in the rear of said dial-plate and provided upon its face with marks indicating the aggregate cost of goods to be weighed, the shaft 12 of the weighing
120 mechanism located within said bushing, a pointer 13 rigidly fixed to the end of said shaft and to said bushing in front of said dial-plate to stand normally in vertical alignment with said sight opening of said calculator
125 plate, said calculator plate, pointer and shaft being simultaneously revoluble, a set-screw 16 located in said bushing and engaging said shaft to lock said bushing and shaft in position, and common fastenings which
130 hold said dial-plate against revolution, substantially as herein specified.

3. In a price scale, the improved dial plate 8 secured to the casing of the scale so that it

cannot revolve, and provided with marks indicating weight and having a sight opening 17, one side of which opening is perfectly straight and the opposite side of which is
5 notched to form a series of fixed pointers 18, which project a distance separate from each other in combination with a calculator plate 11 having upon its face a series of annular concentric lines and marks indicating the aggregate cost of goods to be weighed and visible
10

through said sight opening of said dial-plate, said series of pointers indicating the different annular lines upon said calculator plate, substantially as herein specified.

In testimony whereof I affix my signature in 15 presence of two witnesses.

HENRY EDZARDT KNOTTNERUS.

Witnesses:

HERBERT L. ROBINSON,
ALFRED A. EICKS.