(No Model.)

# G. LUNDBERG.

## WEIGHING AND PRICE SCALE.

No. 486,787. Patented Nov. 22, 1892.

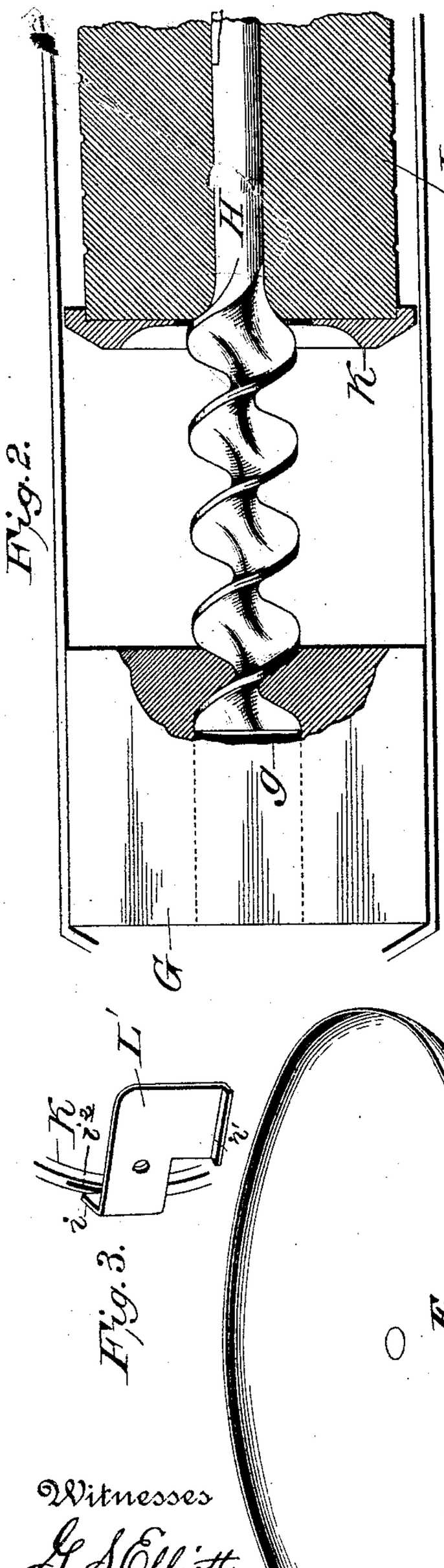


Fig. 2.

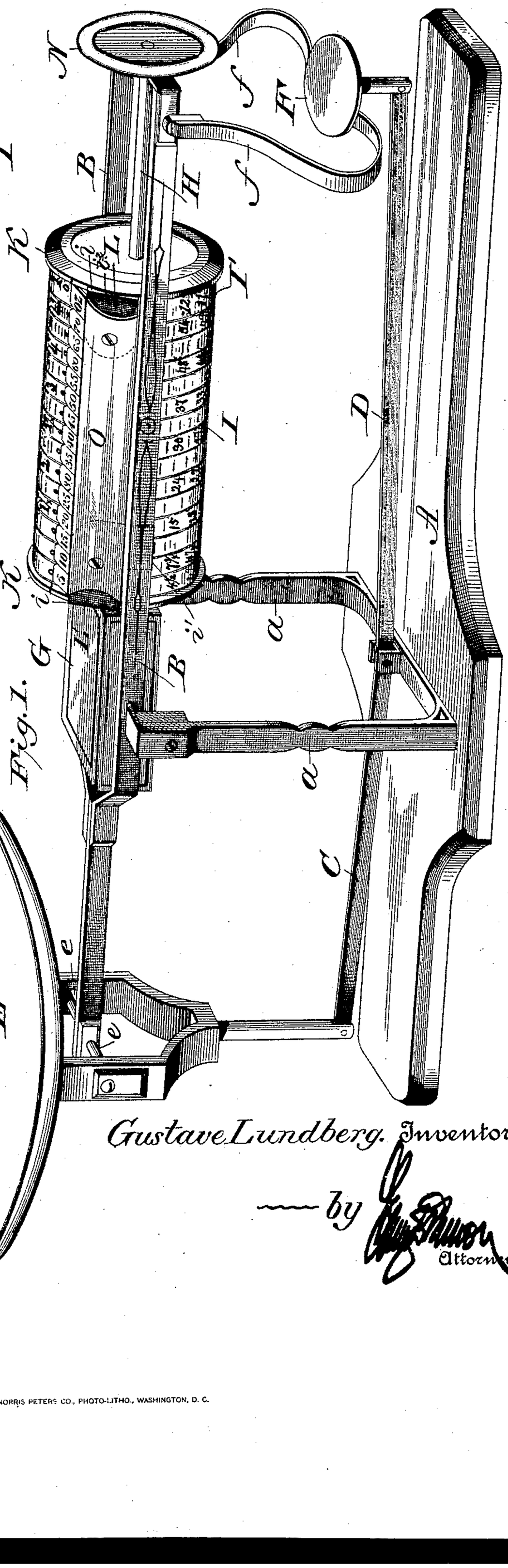


Fig. 1.




Fig. 3.

Witnesses
G. S. Elliott.
E. W. Johnson

Gustave Lundberg. Inventor
by E. W. Johnson
Attorney

# UNITED STATES PATENT OFFICE.

GUSTAVE LUNDBERG, OF LOGAN, UTAH TERRITORY.

## WEIGHING AND PRICE SCALE.

SPECIFICATION forming part of Letters Patent No. 486,787, dated November 22, 1892.

Application filed April 30, 1892. Serial No. 431,278. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAVE LUNDBERG, a citizen of the United States of America, residing at Logan, in the county of Cache and Territory of Utah, have invented certain new and useful Improvements in Weighing and Price Scales; 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 of reference marked thereon, which form a part of this specification.

This invention relates to improvements in combination-scales, by means of which an article placed in the scale-pan is not only accurately weighed, but also the price or cost of said article is determined by the same operation; and the invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a combined weighing and price scale constructed in accordance with my invention. Fig. 2 is a detail sectional view through a portion of the rotary cylinder and block into which the spiral end of the shaft which carries the rotary cylinder passes, and Fig. 3 is a detail view of the plate which carries the scale-plate.

A designates the base upon which the weighing-scale is mounted. To this base is rigidly secured a cross-piece having uprights *a a*, in which are journaled the knife-edge bearings carried by the scale-beam B. The cross-piece is provided about centrally with upwardly-projecting lugs, between which are pivoted one end of the bars C and D, the opposite ends of said bars being pivoted, respectively, to the support for the pan E and to the platform F. The support for the pan E is provided with bearings *e e* for a cross-bar carried by one end of the scale-beam. The weight-receiving platform F is hung or pivotally connected to the opposite end of the scale-beam by means of curved bars *f f*. By thus connecting the scale-pan and platform to the beam and to the bars C and D the platform and scale-pan will always have a direct vertical movement.

The scale-beam B, instead of being a straight bar, as usually employed in scales of this class, is provided with an open frame which extends from one end thereof to a point beyond its fulcrum, and within this frame and at the end nearest the fulcrum is rigidly secured a block G, which is suitably weighted. This block is provided centrally with an aperture *g*, into and through which passes the spiral portion of the shaft H, said shaft carrying a cylinder I, which is securely attached thereto by a key or otherwise. The cylinder I carries at each end a head K, which is grooved or recessed to receive the end of the cylinder and apertured to receive the bent ends *i* of plates L and L′, said plates being independent and shaped as shown in Fig. 3, the ends *i* thereof engaging with apertures $i^2$ in the heads K, so as to prevent said heads turning, the lower bent ends $i^2$ engaging with the under side of one of the side bars of the scale-beam. These plates are rigidly secured to the plate O, which carries the price-scale on its upper edge. By means of this construction the heads are held in contact with the ends of the cylinder and are at the same time held against rotation, while said cylinder, being carried by the shaft H, rotates therewith and moves within the open frame of the scale-beam between the side bars, said shaft being turned by a hand-wheel N, the weight of said hand-wheel and the weight of the cylinder acting in unison.

The cylinder I is provided with peripheral ridges or lines to form columns or spaces which extend around the circumference of said cylinder, these columns or spaces being divided or marked off in the manner and for the purpose hereinafter set forth.

The plates L and L′, hereinbefore referred to, carry a scale-plate O, the front edge of which extends to near the cylinder, and is divided to correspond with the number of columns which extend around said cylinder. Each one of the divisions on this plate is given a number or monetary value, and the corresponding column on the cylinder is marked off or spaced to represent aliquot parts of that number with respect to the

gravity or weight of the article to be weighed, which weight is indicated by the scale or figures I′ around the cylinder I near one end thereof. The object of this construction will be obvious to those skilled in the manufacture of scales, and by means of the device not only the weight of the object can be ascertained, but the price of the same readily indicated.

The column I′ adjacent to one end of the cylinder is spaced or marked off to represent the aliquot parts of a pound or ounces.

It will be noted that the spiral end of the shaft H passes through the spiral aperture *g* in the block G, which is rigidly attached to the frame, and that the cylinder I is rigidly attached to this shaft, so as to turn therewith, while the heads K K are held against rotation by reason of the plates L L′ entering the recesses $i^2$ in said heads, the lower ends of the plates engaging with the under side of one of the side bars of the frame. The lower edge of the connecting-plate O engages with the upper edge of the frame, so that the scale-plate will move longitudinally with the cylinder and will be held against rotation. The cylinder I serves as a movable weight, being the equivalent of the pea, and when the head nearest the supporting-pivot of the frame abuts against the block G the scale will balance. The cylinder I, in addition to being the equivalent of the pea, is divided and subdivided to provide a calculating device, which is used with a scale on the plate O, the divisions I′ referring to pounds, ounces, &c. It will also be noted that there is a definite proportion and relation between the arrangement of the scales on the cylinder and the pitch of the screw and the weight of said cylinder, said parts being arranged to act in conjunction with each other to produce the result set forth.

In practice the scale may be operated as follows: Should a purchaser desire eight ounces of an article the price of which is forty cents an ounce, the hand-wheel is turned to move the cylinder I until the figure "8" in the column of figures I′ is at the edge of the scale-plate O. When eight ounces of the article have been deposited in the scale-pan, the scale will balance, and the salesman by simply glancing at the space on the cylinder adjacent to the figure "40" on the scale-plate will see that the figure "20" is presented, which denotes the price of the eight ounces. Prices of other fractions of a pound can be determined in the same manner, and the proper weight or amount of an article can be given by simply setting the price-scale. It will thus be seen that the price of an article can be ascertained without mental calculation.

It will be obvious that the cylinder can be divided into any suitable number of divisions and the scale-plate varied accordingly.

When it is desired to weigh articles beyond the capacity of the cylinder, ordinary weights may be placed upon the platform F.

It will be seen that this improved weighing and price-determining scale is simple in construction, and can therefore be cheaply manufactured and is not liable to get out of order.

Having thus described my invention, I claim—

1. The combination, with the supporting-frame, of a pivoted beam carrying a revoluble and longitudinally-movable graduated cylinder, and a non-rotatable scale-plate carried by the beam and engaging with the cylinder so as to be moved therewith upon the scale-beam, substantially as shown, and for the purpose set forth.

2. The combination, with a pivoted beam, of a rotary cylinder adapted to be moved longitudinally upon the beam, said cylinder carrying a non-rotatable indicating-plate, said plate and cylinder being suitably divided and marked to indicate the weight of an article placed on the opposite end of the scale-beam from the cylinder, substantially as shown, and for the purpose set forth.

3. The combination, with a pivoted scale-beam, of a rotary and longitudinally-movable cylinder carrying a peripheral scale indicating weight, and a series of peripheral scales indicating the prices of predetermined quantities, and an indicating-plate spaced to correspond with the divisions and sub-divisions on the cylinder, said plate being adapted to move longitudinally with the cylinder and held against rotary movement by engagement with the scale-beam, substantially as shown, and for the purpose set forth.

4. In combination with a pivoted scale-beam, a rotary shaft H, having fixedly secured thereto a cylinder, a block carried by the scale-beam and provided with an aperture with which the spiral portion of the shaft H engages, and a pan carried by the scale-beam of sufficient weight to counterbalance the cylinder when it reaches the limit of its movement toward the scale-pan, substantially as shown.

5. The combination, with a supporting-frame, of a scale-beam pivoted thereto and provided at one end with a scale-pan and on the opposite side of the pivot with a movable cylinder, said cylinder being fixedly attached to the rotary shaft having a hand-wheel, said shaft having a spiral portion for engagement with a block carried by the scale-beam adjacent to its fulcrum, for the purpose set forth.

6. The combination, in a weighing and price scale, of a scale-beam having an open frame on one side of its fulcrum, the side bars of said open frame carrying a block G, apertured for the reception of a longitudinally-movable and rotary shaft H, having a spiral end portion, a graduated cylinder rigidly attached to the shaft between the side bars of the scale-beam, said cylinder carrying stationary heads which are connected by plates having bent ends which engage therewith, one of said plates also engaging with one of the side bars of the scale-beam to prevent the

rotation of the same, and a scale-plate O, carried by the plates L and L′, so as to move longitudinally with the cylinder and be held against rotation, substantially as shown, and for the purpose set forth.

7. In combination with a scale-beam B, fulcrumed upon a supporting-frame and provided at one end with a platform which is hung therefrom, a pan mounted on the opposite end of the beam, bars C and D, connected to the pan and platform and pivoted to the supporting-frame, and a movable weight and price-determinining cylinder carried by the scale-beam, so as to be capable of both a rotary and longitudinal movement, substantially as shown, and for the purpose set forth.

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

GUSTAVE LUNDBERG.

Witnesses:

GEO. Q. RICH,

J. BYRON JENNINGS.