(No Model.)

S. D. BRASTOW & J. E. RICE.

BALANCE SCALE.

No. 455,588. Patented July 7, 1891.

Fig. 1.

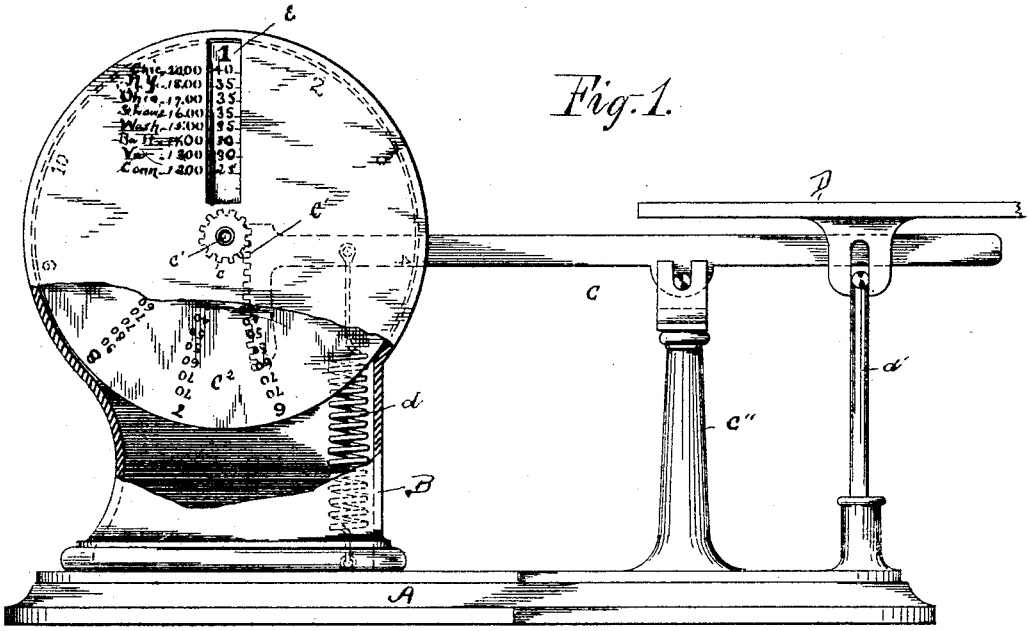
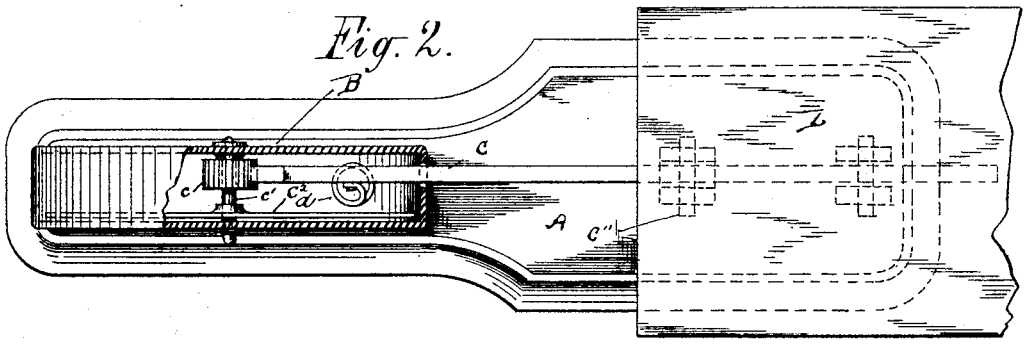


Fig. 2.



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UNITED STATES PATENT OFFICE.

SOLOMON D. BRASTOW, OF SAN FRANCISCO, AND JAMES E. RICE, OF NEWCASTLE, CALIFORNIA.

BALANCE-SCALE.

SPECIFICATION forming part of Letters Patent No. 455,588, dated July 7, 1891.

Application filed September 27, 1890. Serial No. 366,407. (No model.)

To all whom it may concern:

Be it known that we, SOLOMON D. BRASTOW and JAMES E. RICE, citizens of the United States, the former residing at San Francisco, in the county of San Francisco and State of California, and the latter at Newcastle, county of Placer, and State of California, have invented certain new and useful Improvements in Balance-Scales; and we do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

Our invention relates to certain new and useful improvements in balance-scales, which consist of the parts and details of construction, as will be hereinafter more fully set forth in the drawings, described, and pointed out in the specification.

Our invention is designed more especially for use in connection with express-offices, and has for its object to obviate the annoyance of referring to the schedule of rates in order to ascertain the rate per hundred or pound for any given number of miles or from one city to another.

The further object of our invention consists in providing a weighing-scale so constructed that the weight of the package or article to be weighed will serve to throw into sight a movable dial indicating the number of pounds which the package weighs, and at the same time a graduated rated scale corresponding to the charge-rate upon the number of pounds disclosed by the dial; and our invention further consists in providing a weighing-scale which shall be simpler in its construction, more effective in its operation, and less expensive than any device of a similar nature heretofore known to us.

Referring to the drawings forming a part of this specification, wherein similar letters of reference are used to denote corresponding parts throughout the entire specification and drawings, Figure 1 is a side view in elevation showing a portion of the outer casing partly broken away for the purpose of showing inner movable dial, and Fig. 2 a top plan view with portion of casing partly broken away.

The letter A is used to indicate the base of the scale, to which is secured or attached the casing B. To the outer portion of the base we locate the standard C″, upon which is pivoted the beam C. Said beam extends into the casing B and has its inner end provided with the rack-bar C′, which is adapted to intermesh with teeth of gear *c*, which is rigidly mounted upon shaft *c*′. Working within the casing is dial C^2, which is attached to axle or shaft *c*′ and rotates therewith. The inner portion of the beam we secure to base A by means of spring *d*. Upon the outer end of beam C we locate the platform D, which works upon vertical standard *d*′. One face of casing B we provide with the elongated opening *e*, and to one side of said opening is an enameled or painted graduated schedule showing rate per hundred pounds and also the different points of destination. Near the periphery of dial C^2 we enamel or otherwise place a series of figures running from zero to ten, and underneath said weight-indicating figure locate the graduated rate-scale per pound equal to that shown by the dial-weight number. Of course the figures located near the periphery of dial C^2 can be increased, so as to extend from zero to any desired number, in accordance with the weighing capacity of the scale. Consequently upon exposure to view through the elongated casing-opening the exact charge, corresponding with weight in pounds, is given.

In carrying out the table of weight it is only necessary that the weigher bear in mind the rate to any fixed point, which would be indicated by the fixed scale upon the casing-face. Hence upon the weighing of the package the dial indicates the number of pounds and the graduated scale discloses the rate per said number. The rate-table of classification is fixed in accordance with the classified table in general use and adopted by express-offices throughout.

To clearly indicate the functions of the several parts of our device, it is to be stated that the numbers from 0 to 10, arranged around the edge or top of the dial, indicate the weight of the package, the graduated scale thereunder the necessary cost per pound, while the scale to one side of the casing, opening the rate per hundred pounds. The scale mechanism is of course so adjusted that when a

pound package is placed upon the platform the inner dial C^3 is turned just far enough to bring the numeral 1, and the numbers below the same to view through the opening in the casing. The same is true in regard to a package weighing two pounds, and so on. In the accompanying illustration of the device we have shown the inner dial C^2 turned so as to bring the figure 1 and the numbers thereunder to view. In this instance, therefore, the package weighs one pound. If, now, we suppose it is to be forwarded to Chicago, instead of having to search the rate to Chicago per pound in the classification the package is merely placed upon the scale-platform, which causes the outer end of the pivoted beam to move downward and its inner end upward within the casing, and as it moves upward the rack-bar formed on the inner end engages or meshes with gear *c*, mounted on shaft *c'*, and necessarily causes the rotation of the shaft, which carries the inner dial C^2, mounted thereon. Said dial revolves until figure 1 is exposed through the casing-opening. This indicates that the package weighs one pound. By looking at the casing-table it will be observed that the rate to Chicago is twenty dollars per hundred pounds, and by reference to the first number of the scale below figure 1 it will be observed that the rate to Chicago for one pound is forty cents. Thus it will be noticed that the rate per hundred pounds, weight of package, and cost of expressage thereon is furnished at once. If the package weighed two pounds, the disk would rotate until figure 2 thereon appeared, and by reference to the graduated scale below in like manner the rate for two pounds to any point upon the casing-face may be readily determined.

Heretofore in scales adapted for weighing purposes in connection with express-offices, it has been customary to have the scale-beam operate an indicator-finger, which traverses the radius of the dial, which is provided with numerals for the purpose of indicating the number of pounds. In our device, however, it will be noticed that we dispense with the indicator-finger and adapt the dial so as to rotate and display not only the weight of the package, but simultaneously therewith the charge thereon.

We are aware that minor changes may be made in the arrangement of parts and details of construction herein shown and described without necessitating or creating a departure from the nature and scope of our invention.

Having thus described our invention, what we claim as new, and desire to secure protection in by Letters Patent of the United States, is—

In a balance-scale, the combination of a base-piece, a supporting-standard extending therefrom, a horizontal beam pivoted upon the upper end of said standard, carrying upon its outer end the platform and formed or provided upon its inner end with a vertical rack-bar, a casing extending from the base-piece, provided with a vertical slot and to one side of said slot with characters indicating the place of destination and the rate per hundred pounds for the respective places, a transverse shaft having its journals in the sides of said casing, and carrying a gear adapted to mesh with the rack-bar of the beam, a disk mounted upon the shaft and rotatable therewith, said disk provided with a series of peripheral numbers indicative of pound weight, and below said peripheral numbers a series of numerals indicative of the charge per pound, and a spring having one end secured to the scale-beam and its opposite end secured to the base-piece, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

SOLOMON D. BRASTOW.
JAMES E. RICE.

Witnesses:
A. G. MCFARLAND,
ED. KATZENSTEIN.