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M. A. WISE.

COMPUTING ATTACHMENT FOR SCALE BEAMS.

(Application filed Nov. 25, 1898.)

(No Model.)

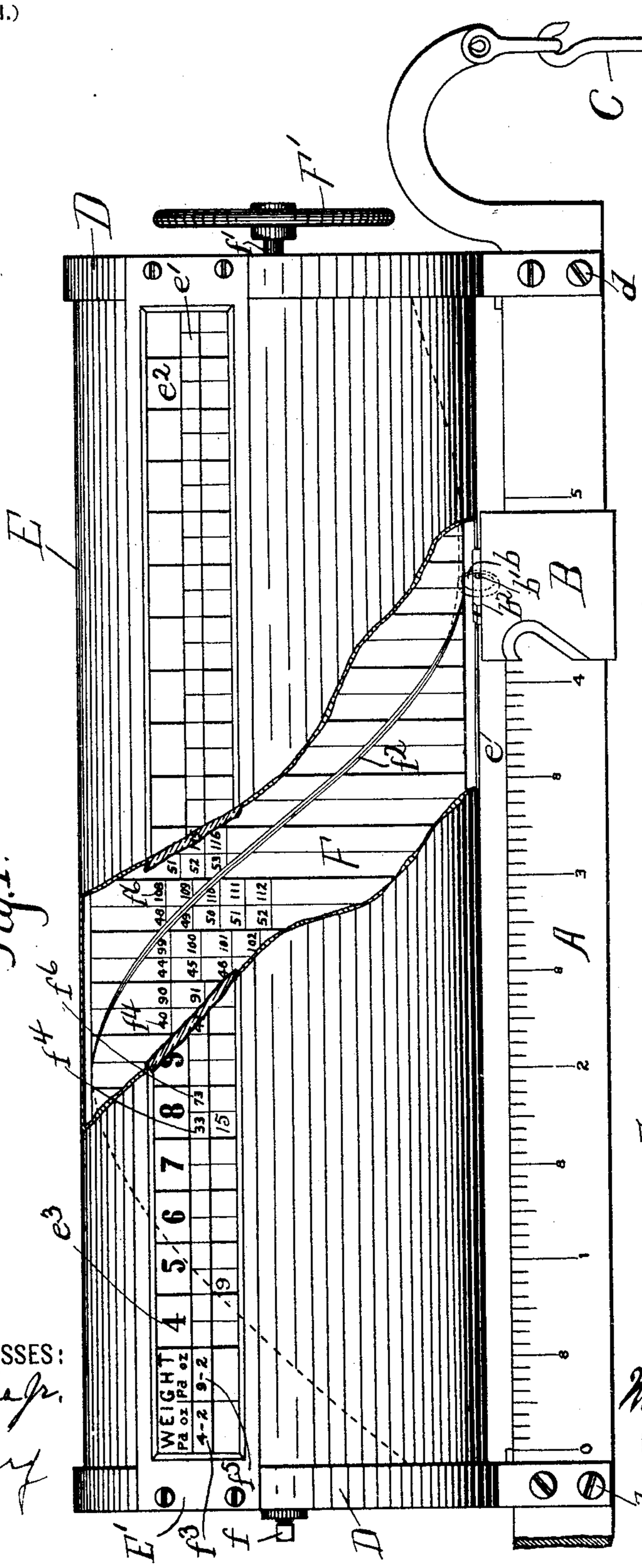

Fig. 1.

Fig. 4.

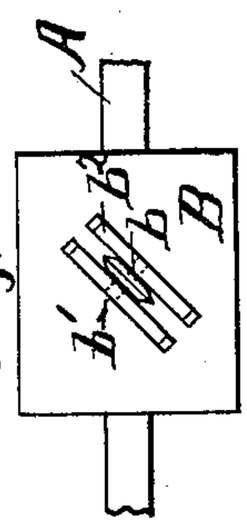

Fig. 3.

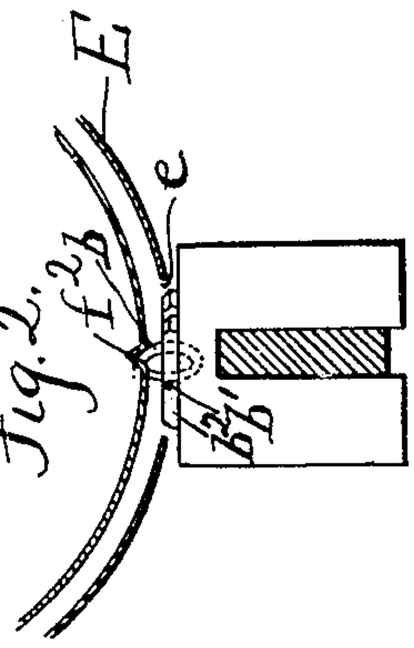

Fig. 2.

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MARGARET A. WISE, OF ERIE, PENNSYLVANIA.

COMPUTING ATTACHMENT FOR SCALE-BEAMS.

SPECIFICATION forming part of Letters Patent No. 640,348, dated January 2, 1900.

Application filed November 25, 1898. Serial No. 697,407. (No model.)

To all whom it may concern:

Be it known that I, MARGARET A. WISE, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Computing Attachments for Scale-Beams; 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.

This invention relates to computing attachments for scale-beams; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

More particularly, the invention relates to that class of computing devices wherein the cylinder is pivoted on the scale-beam, and has on its surface tabulated characters arranged in such system as to indicate by the rotation of the cylinder different amounts, the position of the cylinder and the characters exposed to view being controlled by the position of the poise on the scale-beam. Heretofore devices have been made of this character wherein the rotation of the cylinder has been accomplished by a series of intermediate mechanisms between said cylinder and the poise. This intermediate mechanism necessarily has had some play to allow the free movement of the parts, and this cumulates so as to be sufficient to effect the control of the cylinder.

The object of my present invention is to overcome this defect and to provide a simple and complete mechanism for accomplishing the purpose.

I have illustrated a scale-beam having a computing attachment thereon exemplifying my invention as follows:

Figure 1 shows a side elevation of the scale-beam with the attachment in place thereon, a part being broken away to better show construction. Fig. 2 shows a section of a fragment of the device on the line 2 2 in Fig. 1. Fig. 3 shows a plan view of the poise. Fig. 4 shows a counterpoise.

A marks the scale-beam, which has the usual marks indicating the graduations for pounds and ounces; B, the poise arranged to slide on said beam, and C the hanger on which the counterpoise may be placed. These parts are, except as hereinafter noted, substantially as now commonly made.

Secured to the scale-beam, preferably by screws *d*, are the end supports D D. A stationary cylindrical covering E is secured to the end supports and has a longitudinal slot *e* next the beam. It is also provided with an opening *e'*, over which a glass cover e^2 is preferably placed, said glass being held in place by the frame E'. Within the cylinder E is placed a rotative cylinder F, which is pivoted on the supports D D by means of the pivot-pin *f* and the rod *f'*. The rod *f'* is provided with the thumb-wheel F', with which the cylinder F may be turned, if desired. The cylinder F has a spiral f^2, preferably of about forty-five degrees pitch, and the cylinder is of such a diameter that the spiral of this pitch will make about one revolution of the cylinder in the length of the cylinder. This spiral is preferably formed by a V-shaped depression in the cylinder itself, as shown in Fig. 2. The poise B has a wheel *b* mounted in it at the same angle to the beam as is presented by the spiral f^2 in its passage over the beam. The wheel *b* is journaled by a shaft *b'* in boxes b^2 on the poise and is so positioned relatively to the cylinder as to run freely in the spiral f^2. It will readily be seen that the wheel b^2 and spiral f^2 form a tongue-and-groove mechanism and that with the longitudinal movement of the poise upon the scale-beam a rotative movement of the cylinder F will be effected through the instrumentality of the poise B operating through the wheel *b* upon the spiral f^2, or, in other words, by the direct engagement of the surface of the computing-cylinder with the poise.

A series of figures f^3, indicating the graduations on the scale-beam, are placed around the cylinder at one end of the same and are so arranged with reference to the spiral f^2 as to have the same character brought to the opening *e'*, as is indicated on the scale-beam by the poise B. Thus in the drawings shown the poise is at four pounds two ounces and the characters f^3, exposed in the opening *e'*, are the same. Within the frame E' and adjacent to the opening *e'* are a series of figures e^3, which are intended to represent the rate per pound of the commodity being weighed. On the surface of the cylinder are systemat-

ically tabulated the characters or figures f^4 with such relation to the spiral f^2 and the opening e' as to indicate in the opening e' under each of the figures e^3 the product of the figure e^3 and the figure f^3, exposed in the opening e', indicating the weight. Thus in the rate-indicating line under the rate "8" the character f^4 is shown as "33," which is the product of the four pounds and two ounces or four and one-eighth pounds and the rate "8." The characters are not carried out in the drawings in the other spaces, but from those shown can be readily understood and supplied as desired.

In order that the device may compute where a counterpoise is used as well as the beam-poise, I have devised the following means: Adjacent to the column of characters f^3 on the cylinder I have placed the column of characters f^5, which indicate the sum of the counterpoise and the amount indicated by the beam-poise. In the example shown I have arranged the device for a five-pound counterpoise. This, added to the four pounds and two ounces indicated by the beam-poise, makes the sum nine pounds and two ounces, as indicated by the figure f^5, exposed at the opening.

The spaces containing the figures e^3, indicating the rate, are broad enough to include a series of spaces or columns on the cylinder F. In the example shown there are two columns under each rate-space. The one at the left indicates the amount where only the beam-poise is used, as heretofore explained. The column at the right on the cylinder indicates the total amount where both the counterpoise and the beam-poise are used, or, as shown, where the five-pound counterpoise is used the weight indicated is nine pounds and two ounces and the figure f^6 indicating this total amount under the rate "8" is "73," or the product of eight and nine and one-eighth. It is manifest that the number of columns similar to those containing the characters f^3 and f^5 may be increased to the number of counterpoises which are to be used, and in this case the number of columns under each rate-space should be equal to the number of weight-indicating columns.

In some instances the spiral running on the surface of the cylinder F interferes with the proper display of figures f^4. I have placed under the opening e^3 figures which are to be read when a blank space, including the spiral, appears in the opening e'.

The figures f^5 are preferably of a different color from the figures f^3, and the figures f^6 are preferably of the same color as the figures f^5. The five-pound counterpoise is also preferably of the same color as the figures f^5 and f^6. Where additional counterpoises are used, an additional column of figures indicate the sum of said counterpoises with the amount indicated by the beam-poise. These additional columns of figures should preferably have the same color as the counterpoise with which they are to be read, and the product figures indicating the products for the same weight figures should also have the same color, which should preferably be different from the color of the other columns.

What I claim as new is—

1. In combination with a scale-beam; a sliding poise on said beam; and a rotative computing-cylinder carried by said beam, said cylinder and poise being provided with a tongue-and-grooved mechanism through which the cylinder is rotated by the direct engagement of the surface of the computing-cylinder with the poise.

2. In combination with a scale-beam; a sliding poise on said beam; a rotative computing-cylinder carried by said beam having a spiral on the surface thereof; and means carried by the sliding poise for directly engaging said spiral.

3. In combination with a scale-beam; a sliding poise on said beam; a rotating computing-cylinder carried by said beam, said cylinder having a spiral on the surface thereof; and a wheel journaled on the poise and adapted to directly engage the spiral on the cylinder, the axis of said wheel being perpendicular to the surface generated by the radial lines perpendicular to the axis of the cylinder and extending through said spiral, at the place of engagement of said wheel, with said spiral.

4. In a computing attachment for scale-beams, the combination of the beam, A; sliding poise, B, having the V-shaped wheel, *b*, journaled thereon; end supports, D D, secured to said scale-beam; a cover, E, carried by said supports, having the groove, *e*, and opening, *e'*, therein; a rate-scale on said cover; a cylinder, F, pivoted on the end supports, said cylinder having the columns of weight-indicating figures, f^3 and f^5, said figures being of different colors; and the columns of product-indicating figures, f^4 and f^6, being of the same color as the figure, f^5; said cylinder also having the spiral groove, f^2, arranged to engage the wheel, *b*; and the hanger, C.

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

MARGARET A. WISE.

Witnesses:
EDWARD W. WISE,
JOHN W. STORKE.