C. C. FIELDS.

Adding-Registers for Pencils.

No. 198,934. Patented Jan. 8, 1878.

Fig. 1.

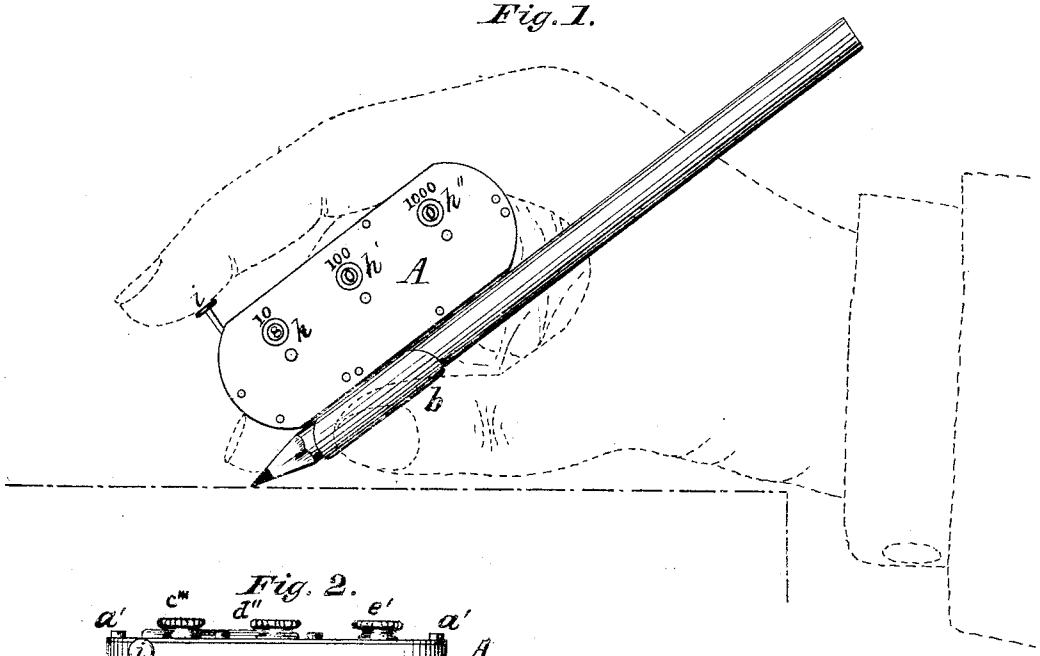


Fig. 2.

Fig. 3.

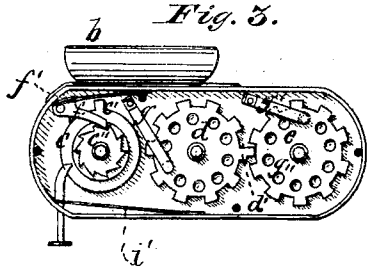
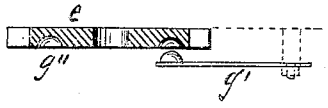


Fig. 4.



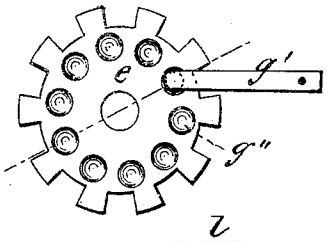
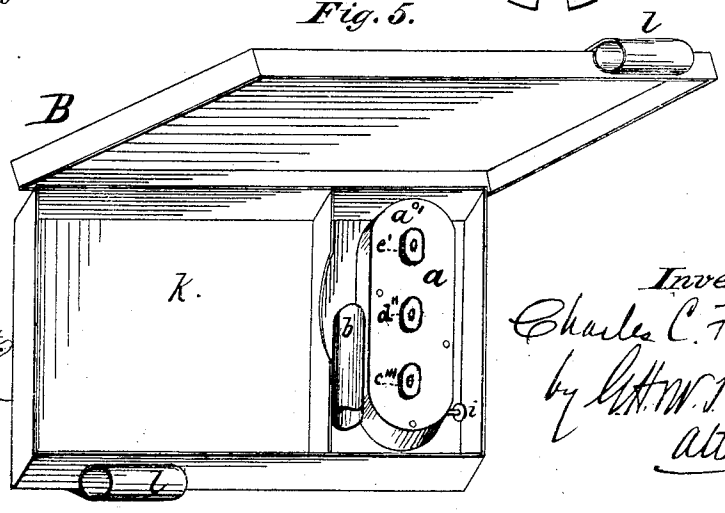


Fig. 5.



Witnesses:

F. C. Brecht,

F. M. Bunnham.

Inventor:

Charles C. Fields,

by Geo. W. & Howard

Attorneys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES C. FIELDS, OF ABINGDON, ASSIGNOR OF ONE-HALF HIS RIGHT TO H. A. MANN AND M. G. MANN, OF WASHINGTON COUNTY, VIRGINIA.

IMPROVEMENT IN ADDING-REGISTERS FOR PENCILS.

Specification forming part of Letters Patent No. **198,934**, dated January 8, 1878; application filed June 21, 1877.

To all whom it may concern:

Be it known that I, CHARLES C. FIELDS, of Abingdon, in the county of Washington and State of Virginia, have invented certain new and useful Improvements in Addition-Registers for Pencils and Pen-Holders, of which invention the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention is designed to assist the accountant in adding long columns of figures by registering the addition of two or more figures the aggregate sum of which is less than ten, thus relieving him from memorizing or carrying in his mind a greatly-accumulated result, nothing less than tens being registered, while the units are carried in the mind.

The instrument is a simple, convenient, and reliable device for use in counting-houses, banks, schools, &c., as a register of additions, and also to prove the same when made in the ordinary way.

The invention consists in the construction and arrangement of the registering devices and the means of operating them, as hereinafter described.

In the accompanying drawing, Figure 1 shows the instrument applied to a pencil in the hand of the accountant. Fig. 2 is a view of the device as seen from the top edge thereof. Fig. 3 is a view showing the side opposite to that shown in Fig. 1, the back plate being removed. Fig. 4 is an enlarged view of a detail of the invention. Fig. 5 is a view of the instrument placed in its box, the lid of the box being raised.

Similar letters of reference indicate similar parts of the invention in all the views.

A is the case of the instrument, having a detachable back, *a*, attached thereto by screws *a'*. The lower edge of the case A is provided with a sleeve, *b*, through which a pencil is passed, as shown in Fig. 1. A tens-wheel, *c*, having a single tooth, *c'*, and a ratchet-wheel, *c''*, is placed at one end of the case A, the pintle of the wheel having bearings in the face-plate and in the back of the case, and being provided with a milled head, *c'''*. A hundreds-wheel, *d*, having ten teeth, one of which, *d'*, is elongated, is placed centrally of the case, the pintle of said wheel also having bearings therein, and being provided with a milled head, *d''*. A thousands-wheel, *e*, is similarly placed at the end of the case next to the hundreds-wheel, as shown, and has ten teeth, all of which are of the same length, the pintle of this wheel having also a milled head, *e'*.

The pawl *f* of the tens-wheel is caused to engage with the ratchet-wheel thereof by means of a spring, *f'*. The pawls of the hundreds and thousands wheels are differently constructed, consisting of semispherical projections at the ends of the springs *g g'*, which are secured to the casing by small screws and nuts. The semispherical projections enter similarly-shaped depressions *g''* in the sides of the wheels, there being ten to each, as shown. The sides of the several registering-wheels next to the face-plate are marked from 0 to 9, which figures, in the revolutions of the wheels, successively show through apertures *h h' h''* in the face-plate, as hereinafter more particularly set forth.

The means of operating the tens-wheel is a finger-piece, *i*, which, when the instrument is properly held, as shown in Fig. 1, is at the forward end of the top edge thereof, the said finger-piece being supported by a spring, *i'*, secured to the case A, as shown.

Supposing the instrument is held as shown in Fig. 1, and the apertures *h h' h''* each indicate 0, in adding up a column of figures the tens are counted and recorded by pressing the finger-piece *i*, the inner end of which strikes a tooth of the wheel *c''*, the units being carried in the mind. Thus, if 6 7 8 are three successive figures of a row, 6 and 7 making 13, the 10 is registered by pressing the finger-piece *i*, which causes the figure 1 to appear at the tens-aperture, the three being carried to the 8 and added thereto, making 11, for which result another depression of the finger-piece *i* is made, causing 2 to appear at the tens-aperture, the 1 over being carried, as before.

It will be understood that when ninety, or nine tens, have been counted and indicated at the tens-aperture, the units being carried in the mind, the single tooth of the tens-wheel strikes one of the teeth of the hundreds-wheel, causing 1 to appear at the hundreds-aperture, the units, if any, being still carried in the mind, and that the same principle and operation ap-

ply to the counting and indication of thousands by the thousands-wheel.

The long teeth of the tens and hundreds wheels are constructed so as to pass without engaging each other.

After having added up a row of the column, the number of units is set down at the foot of the column, and the amount indicated by the register carried to the next column.

Should the accountant become interrupted, and be obliged to discontinue the count of a column of figures, he may register the units at the thousands-aperture by turning the milled head of the thousands-wheel, which is rarely employed, few columns of figures being of such length as to require its use. The accountant would then make a dot with the pencil at the figure last counted, and on recommencing the count carry the units thus indicated at the thousands-aperture to the next figure of the row.

The milled heads of the pintles are used to readjust the wheels to 0, or for any other purpose wherein the wheels are to be moved independently.

I inclose the instrument in a convenient box, B, made of wood, leather, or other suitable material. The box is provided with a space, *k*, in which I place simple printed rules in mathematics. The box is held closed by passing the pencil, which is removed from the instrument, through thimbles or sleeves *l*, one of which is placed in the body of the box, and the other on the lid thereof.

The instrument may be made attractive in appearance by nickel-plating or other finish.

Having described my invention, I claim as new and wish to secure by Letters Patent of the United States—

1. The hundreds-registering wheel, having as a carrying device a single tooth extending beyond the ordinary teeth, the tens-wheel having a single carrying-tooth, and the thousands-wheel having ten teeth of equal length, said wheels being constructed as described, and situated in the same plane, combined with the detents *g g'*, spring-pawl *f*, ratchet-wheel *c''*, and spring finger-piece *i*, substantially as specified.

2. The within-described spring semispherical detent, combined with a toothed registering-wheel having on its side a series of semispherical depressions for the entrance of said detent, substantially as described.

In testimony whereof I have hereunto subscribed my name this 28th day of May, A. D. 1877.

CHARLES C. FIELDS.

Witnesses:

GEO. H. HOWARD,

W. T. JOHNSON.