

(No Model.)

A. L. HUFFMAN.
DEVICE FOR AIDING WORK OF ADDITION.

No. 568,907.

Patented Oct. 6, 1896.

Fig. 1.

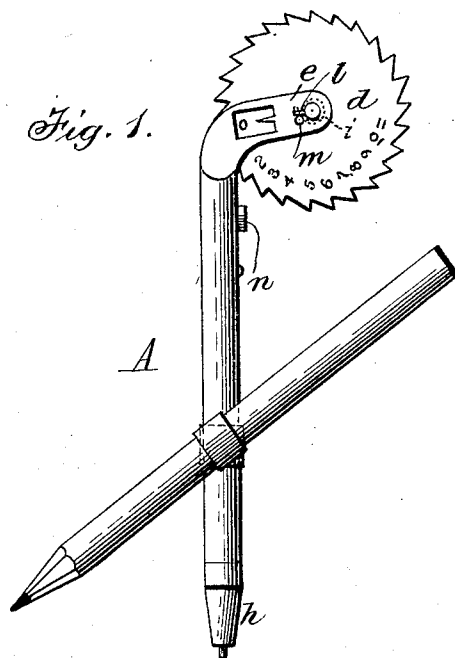


Fig. 2.

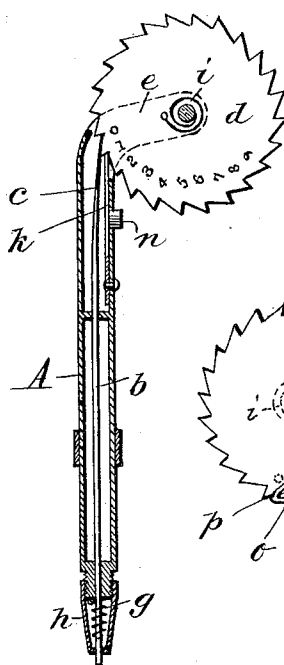


Fig. 3.

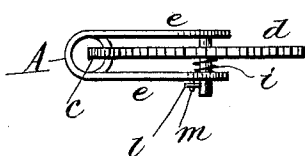
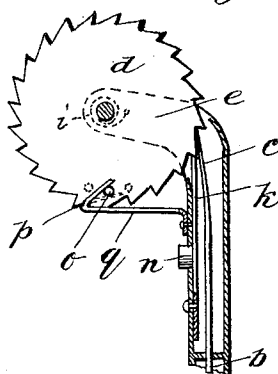


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALBERT L. HUFFMAN, OF COLUMBUS, OHIO.

DEVICE FOR AIDING WORK OF ADDITION.

SPECIFICATION forming part of Letters Patent No. 568,907, dated October 6, 1896.

Application filed February 19, 1896. Serial No. 579,906. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. HUFFMAN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Devices for Aiding the Work of Addition; 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.

Heretofore a number of devices have been made for registering the total of a series of numbers. The aim of my invention differs from these in that it is primarily intended and especially adapted for use in registering the amount to be carried, the right-hand digit in the process of addition being kept and varied in the mind according to the change necessitated by the addition of a figure or group of figures in the process.

My invention consists of a stem to be taken in the hand like an ordinary pencil, a ratchet-wheel bearing a series of numbers supported at the upper end of said stem, a reciprocable plunger-rod in said stem having a spring-finger to engage the teeth of said wheel, a spring to hold said plunger-rod slightly projected from the lower end of said stem, and a thimble adjustable on the lower end of said stem to limit the upward movement of the plunger-rod, and other details incident to this construction, all of which are hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents my improved instrument in side elevation. Fig. 2 is a vertical sectional view, and Fig. 3 is a top plan view, of the upper end of the instrument. Fig. 4 is a view showing a modified form of stop.

Like characters of reference on the different views designate corresponding parts.

A designates the stem or handle, which is perforated axially to contain a rod or plunger *b*, upon the upper end of which is a spring-finger *c*. A ratchet-wheel *d* is journaled in the arms *e* of a frame secured to or forming a part of the upper end of the handle. The face of this wheel contains a series of numbers, preferably from "0" to "50," (one for each tooth on the wheel,) and one or more of which may be seen through an opening in the adja-

cent arm of the frame which supports the wheel. If the entire arithmetical series of figures from "0" to "50" cannot conveniently or legibly be imprinted upon the wheel, the alternate numbers may be omitted and a pointer in the end of the slot or opening, in connection with the contiguous numbers, will indicate the number omitted.

The frame for supporting the ratchet-wheel is curved or bent out from the stem so that the rod or plunger shall be tangential to its edge and the teeth engaged by the spring-finger *c* at the upper end thereof.

The rod or plunger protrudes from the lower end of the stem or handle and is held normally down by a coiled spring *g*. A cap or thimble *h*, open at its lower end for the passage of the point of the rod *b*, screw-threads onto the stem or handle and may be adjusted to limit the upward movement of the plunger so that it shall rotate the wheel just one tooth.

The shaft of the wheel is provided with a coil-spring *i*, which has one end fastened to the wheel or its shaft and the other to the arm of the frame, so that it tends to return the wheel to the "0" position, and a pin *l* on the shaft, by its contact with a stop *m* on the arm of the frame, insures the stoppage of the wheel at "0" position.

A spring-dog *k* prevents the return of the wheel as it is turned tooth by tooth in use, but the wheel may be reset to "0" position at any time by pressure of the finger on the button *n*, releasing both the dog *k* and finger *c*.

In order to save time which would be consumed in laying down the device just described and taking up a pen or pencil to write the total at the foot of an added column, I secure to the stem thereof a ring or clasp adapted to receive and hold a pencil, substantially as shown, so that it shall only be necessary to slightly turn the instrument in the hand to use one or the other, as required.

Any obvious and suitable construction or means for preventing the rotation on its axis of the rod *b* in the spindles may be provided.

With the rigid devices for limiting the movement of the registering-wheel shown in Figs. 1, 2, and 3 the effect is positive, but I propose to overcome this, if desirable, by making either the pin or the stop elastic or yield-

ing in case the wheel should be forced after a complete revolution of the dial. In Fig. 4 I have shown a way of doing this without a pin on the shaft. It consists in providing a pin *o* on the right-hand side of the disk and arranging an arm *p*, having elastic end *q*, constituting a stop, so that if the wheel is unduly forced the pin will pass by the end, as shown in dotted lines, but said end will be sufficiently rigid to stop the wheel for resetting. The arm *p* may be advantageously formed integral with the spring detent or dog, or it may be separate and attached to the frame.

In use the plunger or rod *b* is pushed in at its projecting end so that the finger *c* will move the wheel *d* to indicate the desired number, and when it is desired to reset the wheel to begin a new sum the button is pressed in so as to disengage both the dog *k* and finger *c* to permit the wheel, under the action of spring *i*, to resume the zero or starting position. It will thus be seen that the dog *k* serves both to act as a pawl for the wheel *d* and as a means for releasing the finger *c*.

What I claim, and desire to secure by Letters Patent, is—

1. A device for aiding the process of addition, comprising a stem adapted to be taken in the hand like a pencil, a ratchet-wheel *d* having a series of numbers or characters thereon journaled at the upper end of the stem, a plunger *b* within the stem projecting at the lower end thereof, a spring-finger *c* at

the upper end of the plunger to engage the ratchet-wheel, spring *g* to return the plunger to its normal position, a coiled spring *i* connected at one end to the axis of the ratchet-wheel and at the other to the stem to reset the wheel, a stop *m* on the stem and pin *l* connected with the wheel to engage the stop, the spring-dog *k* located within the stem and arranged to disengage the spring-finger *c*, and a button *n* on the dog *k* protruding at the side of the stem, all constructed and combined substantially as shown and described.

2. A device for aiding the process of addition, comprising a stem adapted to be taken in the hand like a pencil, a ratchet-wheel *d* having a series of numbers or characters thereon journaled at the upper end of the stem, a plunger *b* within the stem projecting at the lower end thereof, a spring-finger *c* at the upper end of the plunger, spring *g* to return the plunger to its normal position, a spring pawl or dog *k* for the wheel *d* located within the stem and arranged to bear against the finger *c* to disengage it from the wheel, and a button *n* connected with the dog and protruding at the side of the stem, substantially as shown and described.

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

ALBERT L. HUFFMAN.

Witnesses:

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