A. L. HATFIELD.

Calculator.

No. 11,726.

Patented Sept. 26, 1854.

FIG. 5.

FIG. 6.

Fig. 1.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 8.

Fig. 4.
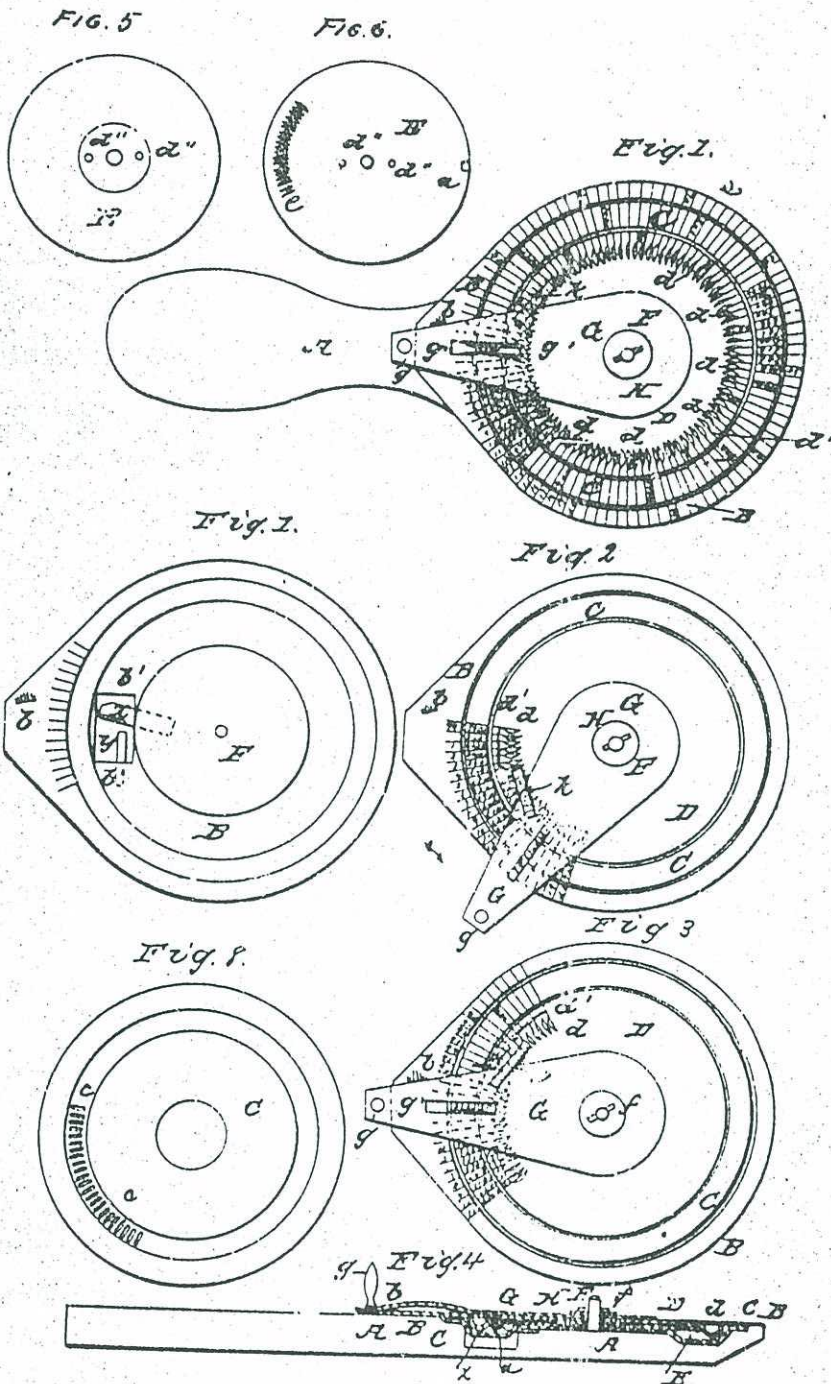
UNITED STATES PATENT OFFICE.

AARON L. HATFIELD, OF LEWISBURG, PENNSYLVANIA.

MACHINE FOR ADDING NUMBERS.

To all whom it may concern:

Be it known that I, AARON L. HATFIELD, of Lewisburg, in the county of Union, State of Pennsylvania, have invented a new and useful Instrument for Reckoning Figures.

The nature of my invention consists in providing a series of circular metallic disks having numbers stamped thereon, so arranged, in connection with springs, that by the alternate movement of a lever, any number of figures, from 1 up to 10,000, or more, may be correctly and easily added together before the eye.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the annexed drawings forming part of this specification, in which—

Figure 1 is a vertical view of one of my instruments. Figs. 2 and 3 are also vertical views. Fig. 4 is a vertical section. Fig. 5 is a top view of one of the disks. Fig. 6 is a bottom view of the same. Fig. 7 is a vertical view of the case with the disks removed. Fig. 8 is a bottom view of disk C.

Similar letters refer to like parts.

A, is the case; B, the outer disk and lining; C, the intermediate disk; D, the upper disk; E, the lower disk; F, center pivot; G, reckoning-lever; H, washer; a, fixed cam attached to the bottom side of the disk E; b, stop on the outer disk B; c, slots cut entirely through the intermediate disk C; d, teeth sunk in the upper side of the disk D; d', points of reference to the disk; d'', steady pins; f, pin in pivot; g, handle in the lever G; g', slot cut through the lever G.

k is a spring-ratchet; x, spring fastened on the lower side of the lining B; x, spring-ratchet attached to the lining B.

The disk D has numbers upon its outer edge commencing from 1 and running up to 100 in the manner indicated in various figures. The disk C has numbers upon its outer edge commencing at 100 and running by hundreds up to 10,000 or more. The disk B has numbers upon its outer edge commencing at 1 and running up to 100.

The disk B, C, D and the reckoning-lever G, are fastened together by means of a pin, f, passing through the pivot F, and the washer H. The steady pins d'' pass up from the lower disk E, through the opening in the center of the disk C into corresponding holes in the disk D; consequently there are no means of turning the disk C except the friction consequent upon its being placed between the two disks D and E, while the disks D and E move simultaneously as if they were made in one piece by means of the steady pins d''.

Suppose now that the reckoning-lever G is turned against the stop b as seen in Fig. 1, through the slot g' may be read the figures 5,200 on the disk C, and 6 on the disk D. Suppose now that it is desirable to add to this amount 15; in order to do so the reckoning-lever G is turned around in the direction of the arrow until the slot arrives over the figures 15 on the disk B. The position of the lever and slot is seen at Fig. 2. The lever is now pushed back again to the stop b, and the spring-ratchet k catching in one of the sunken teeth on the disk D carries the disk D with it and the lever, and when the lever arrives against the stop b the correct sum will be observed on looking through the slot g' as shown in Fig. 3, the amount now before the eye being 5,200 and 21.

[On the lever is also a] disk E sunken [teeth, the outer] edge as [seen,] with the spring-[ratchet] the disk E. [prevents it] from moving. [disk D] being turned [the lever] but permits [the disk] D when the [on] the contrary [being] pressed below [disk] E, would re[store the friction] of the friction, were there no means to prevent it. To accomplish this the disk C is bent toward its outer edge in the form seen in Fig. 4; and through the bend thus made slots are cut entirely through, as seen at c in Fig. 8. Into these slots the spring lever x, Figs. 4 and 7, catches and prevents the disk C from revolving. In order, therefore, that the disk C may be moved at the proper time some means must be devised for releasing the spring x. This is done by the cam a, affixed to the bottom of the disk E. At every entire revolution of the disk E the cam a, comes around and striking the spring x, as seen in Fig. 4, bears it down until the cam a has passed the spring x, when the latter flies up again, and stops the disk,— the movement of the disk C at this time is only equivalent to one notch, which exhibits

a corresponding increase of 100 in the figures seen through the slot g'. Therefore as often as 100 is reckoned by the disk D the disk C is moved forward one notch, and in this manner the correctness of the sums reckoned is insured   the slot g'.

Having thus described my invention I claim—

10   The slotted reckoning-lever G with the spring-ratchet k attached; the disk D with its sunken teeth; the curved disk C, with the slots cut in the curve; the base and lining B with springs s and s disk E with its sunken teeth e, cam and steady pins d'', the whole being arranged and combined in the manner and for the purposes set forth, or, in any other manner substantially the same.

A. L. HATFIELD. [L. S.]

Witnesses:
  H. P. SHELLER,
  HENRY C. HICKOK.