(No Model.)

R. E. McCLELLAND.

COMPUTING MACHINE.

No. 532,241. Patented Jan. 8, 1895.

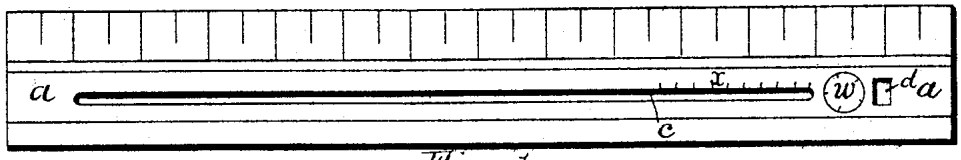

Fig 1

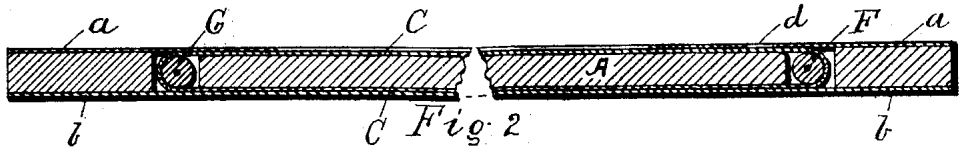

Fig 2

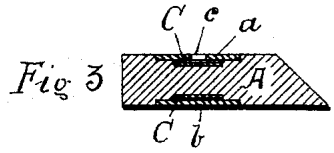

Fig 3

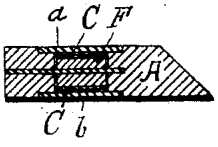

Fig 4

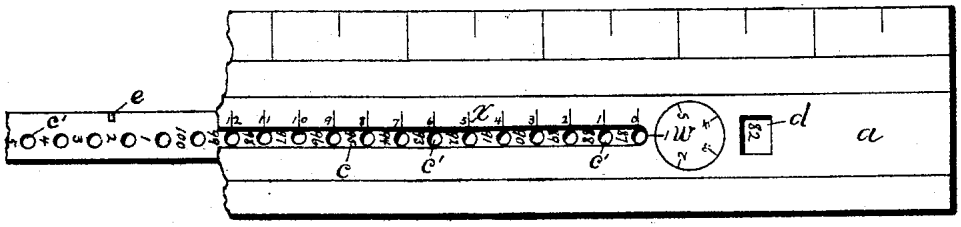

Fig 5

Witnesses:—

Robt. A. Bullard

Inventor:—

R. E. McClelland

UNITED STATES PATENT OFFICE.

ROBERT E. McCLELLAND, OF WILLIAMSVILLE, ILLINOIS.

COMPUTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,241, dated January 8, 1895.

Application filed April 11, 1894. Serial No. 507,118. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. McCLELLAND, a citizen of the United States, residing at Williamsville, in the county of Sangamon and State of Illinois, have invented a new and useful Improvement in Computing-Machines, of which the following is a specification.

My invention is an adding ruler the object of which is to assist by mechanical means the mental operation of adding a series of figures together to find their sum. This I do with the instrument shown in the drawings in which—

Figure 1 is a general top view of the instrument at small scale. Fig. 2 is a longitudinal section. Fig. 3 is a cross section through the center of the ruler. Fig. 4 is a cross section through the pulley F, and Fig. 5 is a top view of one end showing letters and marks not clearly shown in Fig. 1.

Similar letters refer to similar parts throughout the several figures.

The adding ruler consists of a wood ruler A of ordinary size and shape such as is commonly used by book-keepers and accountants. The adding device is inserted in this ruler A and is composed of first, two flat thin pieces of metal *a* and *b* of length the same as the wood ruler A and inserted in grooves in the wood so as to be flush with the surface. One plate *b* is placed on the under side and is plain. The other plate *a* is set on the top side of the ruler and has a narrow slot *c* cut in the center for a greater part of its length, the slot *c* not extending to either end, however, as shown in Fig. 1. On *a*, at one side of the slot *c*, is a scale *x* marked in numbers from 1 to 40. There is a rectangular hole *d* in or near its right end, and a circular hole, grooved in its perimeter, in which a circular index wheel *w* is placed and which revolves in the said groove. A metal belt ribbon C, numbered in equal parts from 1 to 100, is placed to run beneath the plates *a* and *b* and at the points near the ends of the ruler pass around the pulleys F and G so that C can be easily rolled in its position in the ruler.

The ribbon C has small holes *c' c' c'* between the numbers on C into which a pencil point, or other pointed instrument may be inserted, and C be moved thereby. As C is moved the figures on C pass under the rectangular hole *d* which is the reading point of the ruler, a single number always stopping at *d*.

The pulleys F and G are placed in A near the ends and are secured on pinions so that they may easily turn. They are of the width of the ribbon C which passes around them. On the ribbon C near its edge is a small nib *e* which has a slight projection above the surface of C. The object of the nib *e* is to move the index wheel *w* when *e* passes under *w* so that 100 may be registered by *w*. The nib *e* is located on C at such a distance from the hundred number that, as the hundred number passes beyond the opening *d*, *e* will move the index wheel *w* part way round and thus indicate that one hundred has been enumerated. The index wheel *w* revolves in its position in *a* and has on its face several figures from 1 to 5 or more, each indicating a number of hundreds. The under side of *w* is made with as many lugs as hundreds are indicated on *w* against which the nib *e* strikes in its movement thus turning *w* part round.

To use the instrument it is laid on the desk or held in the hand. Before commencing it is made ready by setting the ribbon C to read 100 under the opening *d* which is the same as zero in beginning an addition. The index wheel *w* is set at 0 also, indicating no hundreds. In running up the column of figures to be added the point of a pencil is placed consecutively in the holes *c' c' c'* in the ribbon C at the number on the scale *x* corresponding with the number to be added, and push to the right till the end of the slot *c* is reached. After the figures are followed through consecutively in this way their sum may be found by reading the number on the ribbon C showing through the hole *d*. If the sum exceeds the number 100 the hundreds will be read on the index wheel *w*.

The process may be varied by the operator

adding several of the numbers mentally and then moving C from the point expressing their sum.

Having thus described my invention, what I desire to secure by Letters Patent is—

An adding ruler composed of the wood ruler A, the plate *a* with slot *c*, hole *d*, index wheel *w* and scale *x*, the plate *b*, the movable ribbon C with holes *c'* *c'* *c'* and nib *e*, pulleys F and G all substantially as and for the purposes set forth.

ROBT. E. McCLELLAND.

Witnesses:
W. L. PERCE,
J. P. TURLEY.