

(No Model.)

J. V. CHARPANTIER.

APPARATUS FOR FACILITATING THE MULTIPLICATION OF NUMBERS.

No. 343,796.

Patented June 15, 1886.

Fig. 1.

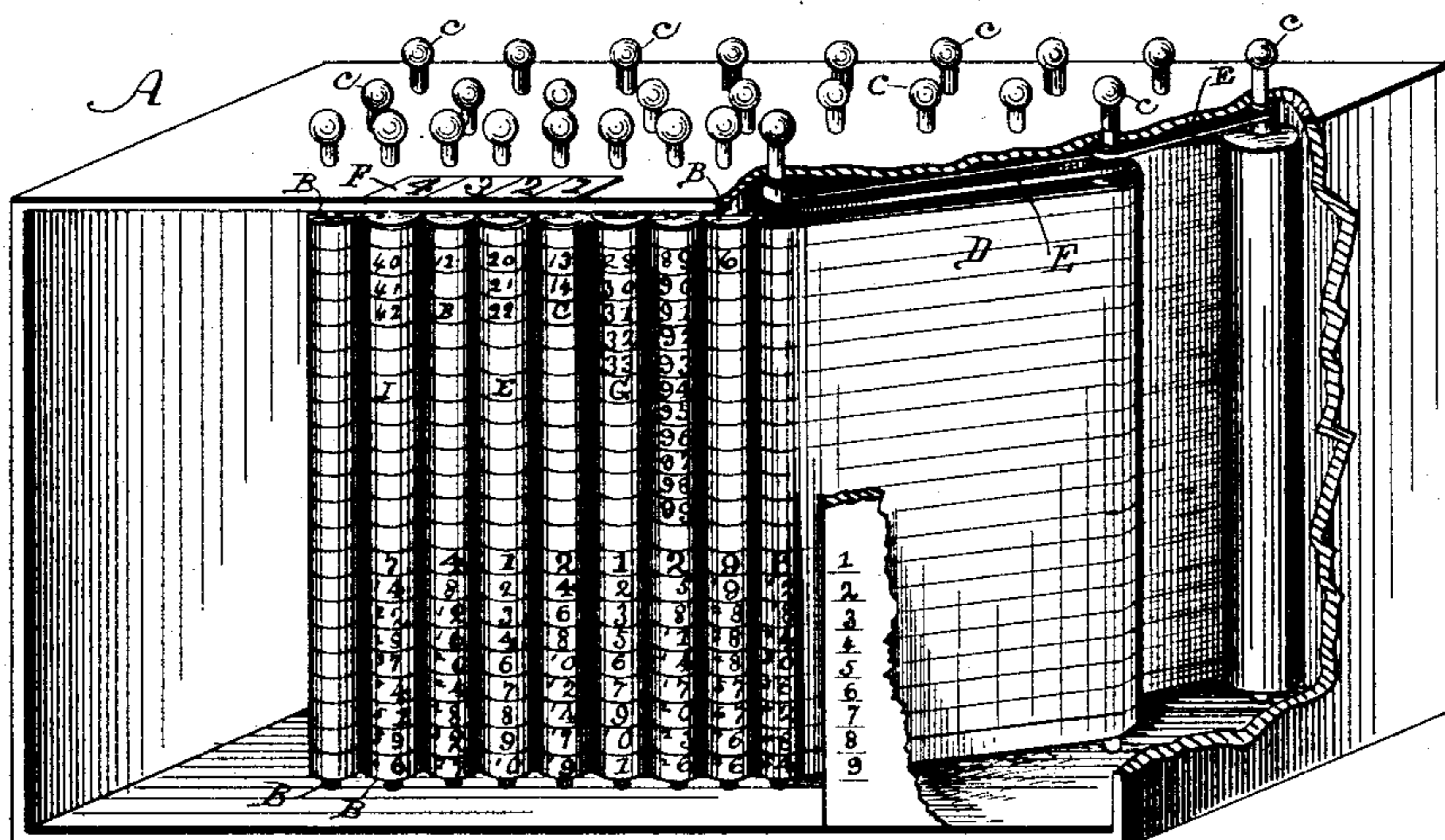
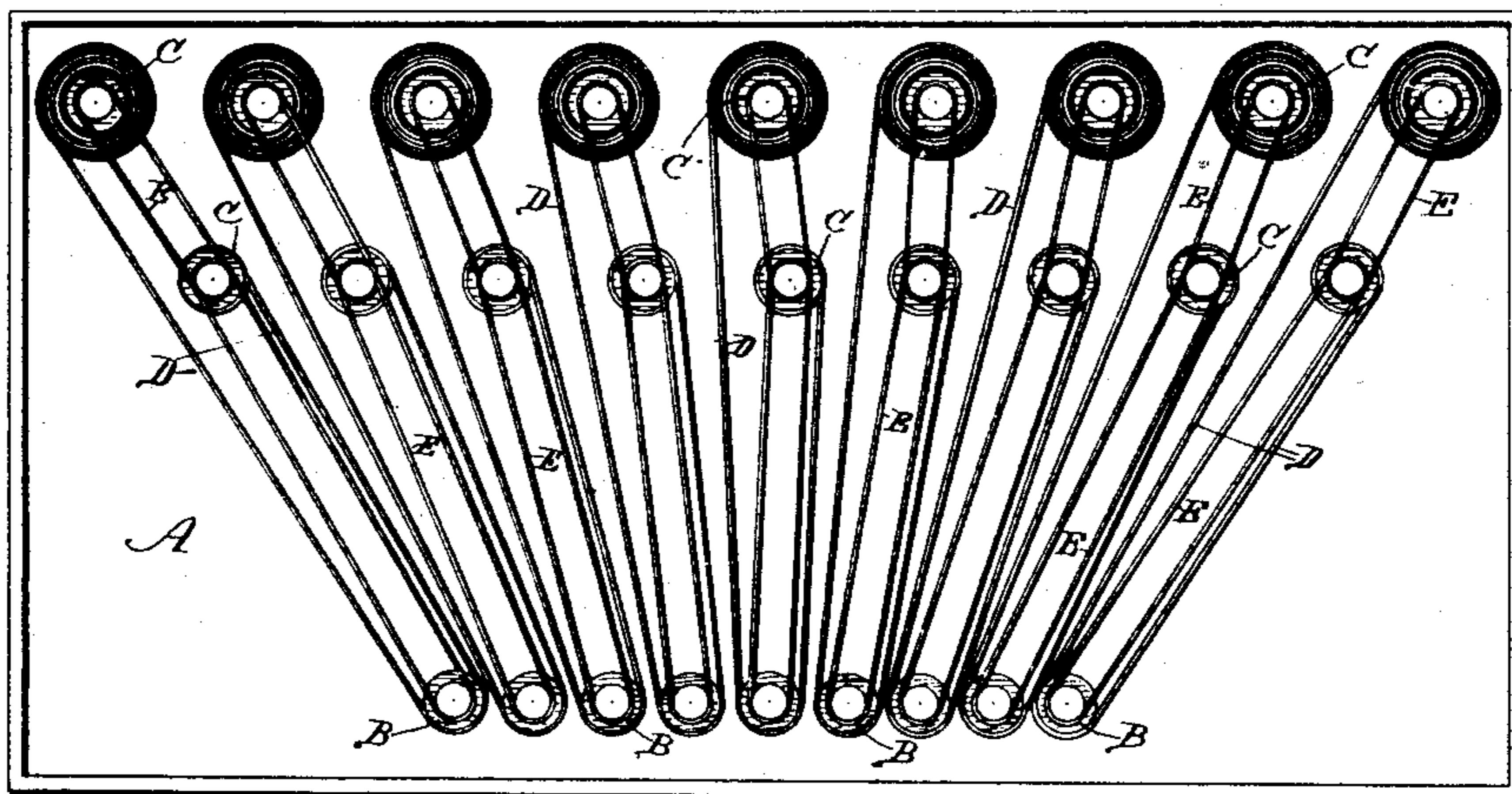


Fig. 2.



WITNESSES:

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APPARATUS FOR FACILITATING THE MULTIPLICATION OF NUMBERS.

SPECIFICATION forming part of Letters Patent No. 343,796, dated June 15, 1886.

Application filed January 20, 1886. Serial No. 189,232. (No model.)

To all whom it may concern:

Be it known that I, JULES V. CHARPANTIER, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Apparatus for Facilitating the Multiplication of Numbers, of which the following is a description.

Figure 1 is a perspective view of my improved apparatus, parts being broken away and others shown in section; and Fig. 2 is a plan view of the apparatus, the lid being removed.

The present invention relates especially to improvements on the device covered by my former patent, No. 322,160. In the practice of the present invention, I employ the same series of independent sections inscribed with numerals described in my former application, as well as the reference tables or book therein described. In the present application therefore I will not repeat the description of such parts nor illustrate the same except as they are necessary to a full understanding of my improvements.

The present invention consists in a novel combination and arrangement of the section-supports as well as in an index, arranged as will be hereinafter explained.

The box or case A may be of any suitable construction, opening at one side as shown, which opening may be covered with glass when so desired. In the front of the box I secure parallel to each other a series of guides, B, preferably journaled rollers, as shown. These guides are placed in close relation, usually a distance apart equal to the thickness of two sheets of paper, about as shown. Manifestly the numbers of these guides may be varied. In the box in rear of these guides I arrange carrying-rolls C C, two for each of the guides having knobs *c*, by which they may be turned. It is preferred to arrange the rolls of each pair, one in rear of the other, in order that a larger number of rolls may be arranged in a given width of box, as will be understood from Fig. 2. The sections D being sheets usually of paper, inscribed as described in my former patent, are supported alike, so the description of one will answer for all. Such sheet, it will be seen, is passed around one of the guides B, and has its ends passed through between such guide and those on opposite

sides thereof, and such ends are then carried to and wound on the rolls C of the pair used in connection with the particular guide B, as will be seen in Fig. 2. By thus disposing the inscribed sheets, it will be seen I am able to bring the registered portions of the several sheets in close relation, and also expose but a single longitudinal row of figures of each of said sheets at the same time. Thus I prevent the possibility of misreading the several sheets or of reading from one row of figures of one sheet when another should be considered, as but a single row is exposed at a time. Belts E are disposed around the rolls C and guide B of each set, and serve to communicate positively to each member of the set the motion given to any one thereof by the operator, enabling a rapid and easy movement of the inscribed sections and serving to prevent any slipping thereof.

As suggested a difficulty arises in the multiplication by the aid of the apparatus described in my said patent of any number of more than three figures, which difficulty is met by a reference book or table having a number of sets of lettered references, one set relating to the fourth inscribed table, another to the fifth, and so on.

To avoid the possibility of error in referring to such table, I provide an index, F, numbering 1 2 3, &c., ranging from the fourth section out, 1 referring to fourth, 2 to fifth, 3 to sixth section, and so on. By this means there is at once indicated to the operator the page or section of the reference-table to which he should refer in registering a figure in any given one of the inscribed sections. By these constructions I secure a better apparatus by preventing all mistakes of reading and by exhibiting clearly the table of reference to which the operator should refer.

Having thus described my invention, what I claim as new is—

1. The combination of the support or case, the movable sections inscribed substantially as shown, and an index, F, arranged relatively to the rolls and beginning at 1 with a predetermined one of said sections and continuing in proper numerical order in relation with the succeeding sections, substantially as set forth.
2. The improved apparatus for facilitating the multiplication of numbers, consisting of

the support or case, the series of carrying-rolls arranged in pairs, the series of guides arranged close together and provided one for each pair of carrying-rolls, the tables or sections wound
5 on the carrying-rolls and directed between their ends around the guides, the belts connecting the carrying-rolls and guides, and the index arranged relatively to the rolls and be-

ginning at 1 with a predetermined one of the tables or sections, and continuing in proper numerical order in relation with the succeeding sections, substantially as set forth.

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Witnesses:

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