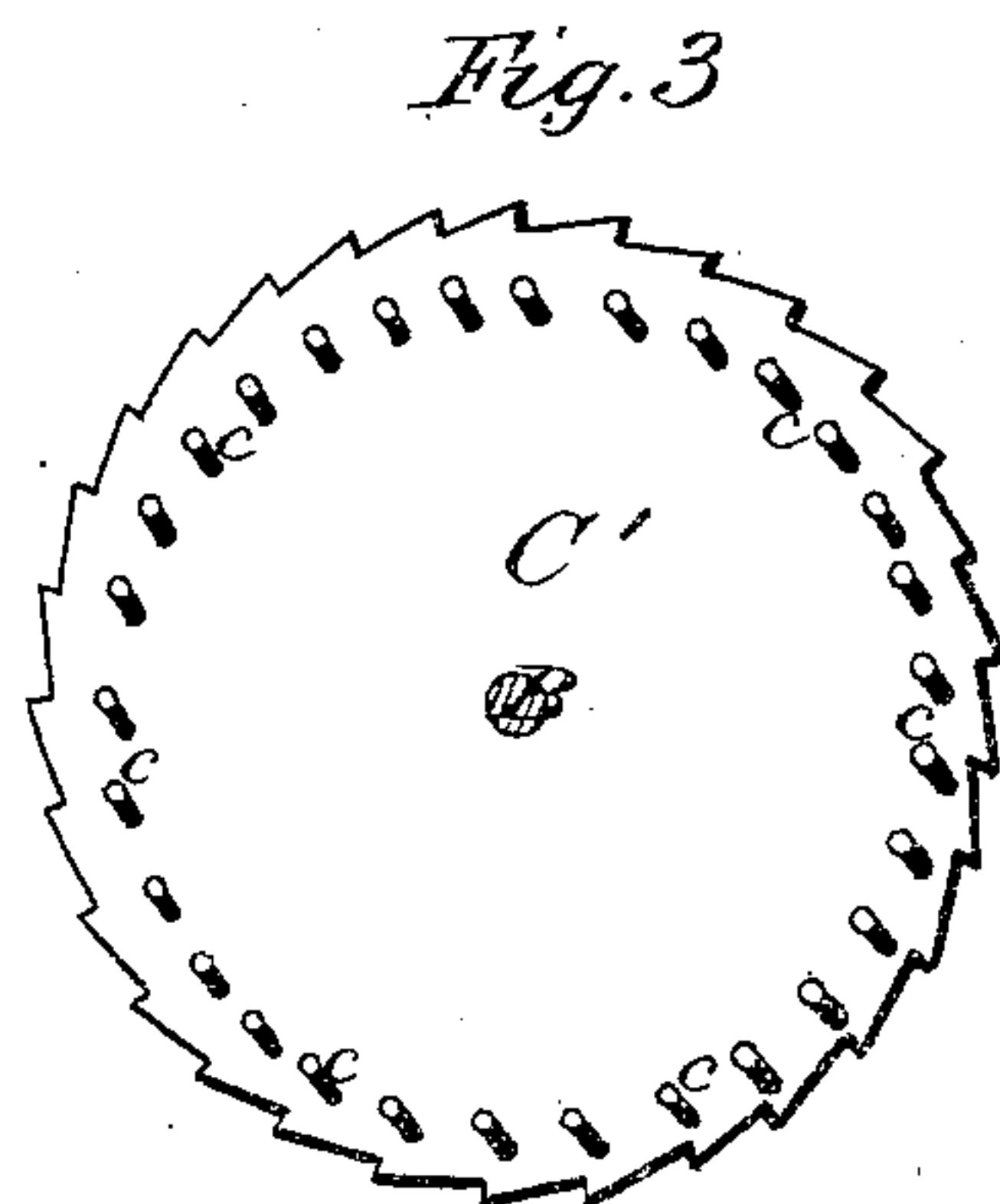
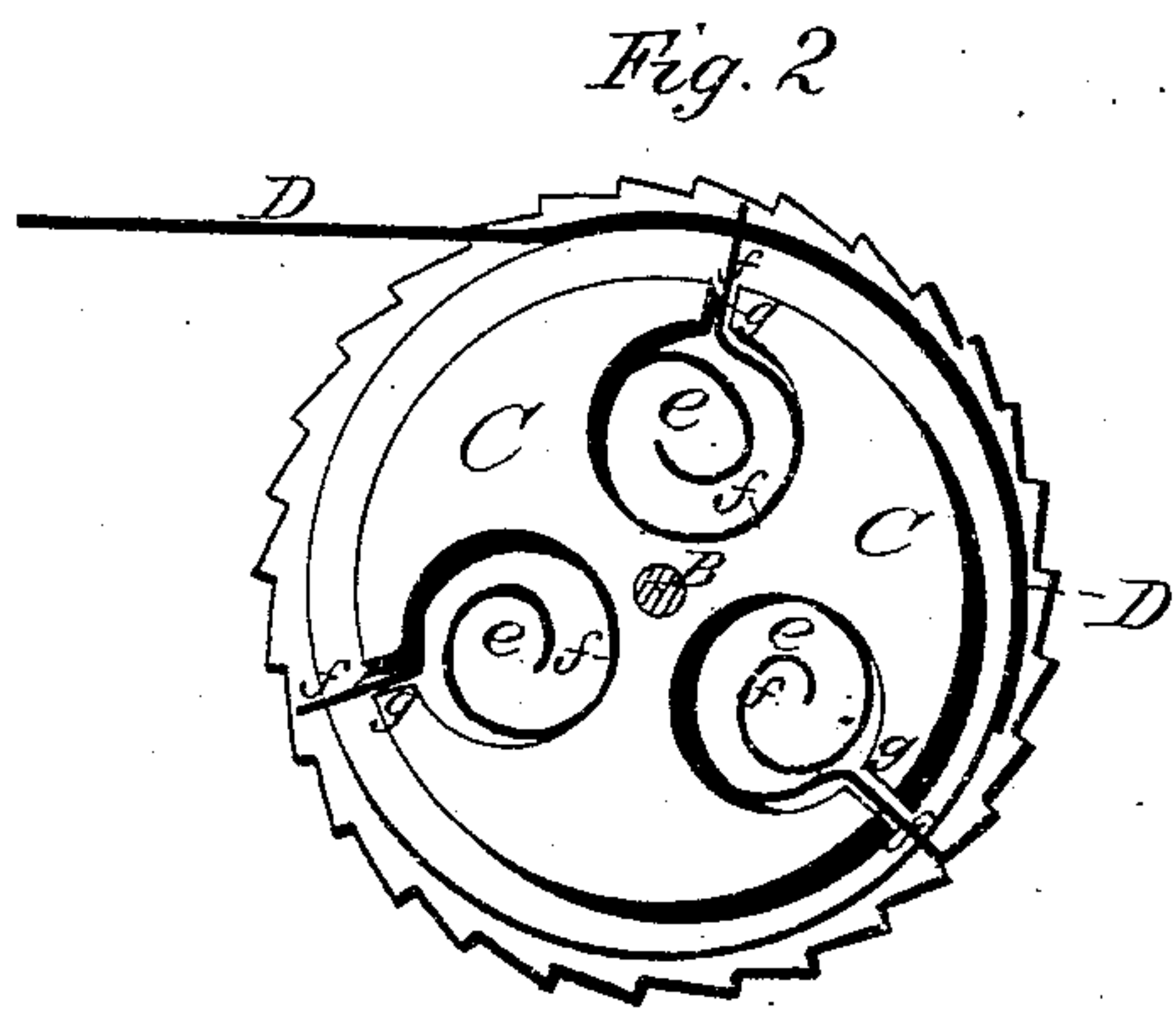
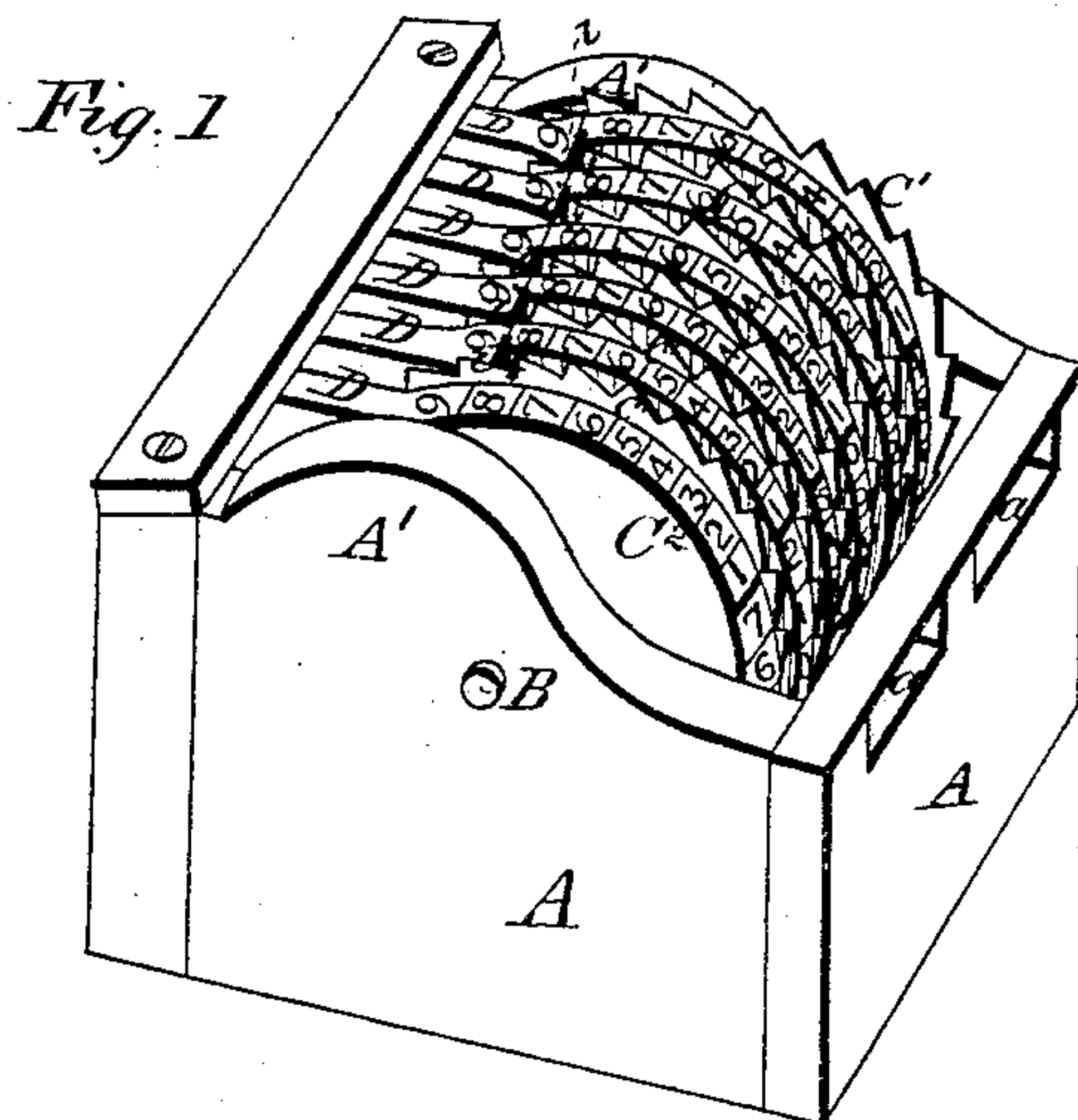


J. H. MEARS.
ADDING-MACHINE.

No. 183,409.

Patented Oct. 17, 1876.



Attest:

Wm Bagger.
C. A. Snow.

Inventor:

John H. Mears,
by Louis Bagger.
his Atty.

UNITED STATES PATENT OFFICE.

JOHN H. MEARS, OF OSHKOSH, WISCONSIN, ASSIGNOR OF ONE-HALF HIS
RIGHT TO ALONZO C. AUSTIN, OF SAME PLACE.

IMPROVEMENT IN ADDING-MACHINES.

Specification forming part of Letters Patent No. **183,409**, dated October 17, 1876; application filed
March 29, 1876.

To all whom it may concern:

Be it known that I, JOHN H. MEARS, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Arithmometers, or Adding-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a perspective view of the machine. Fig. 2 is a side elevation of one of the computing wheels or disks detached; and Fig. 3 represents the reverse side of Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to that class of machines used for computing and adding up sums; and it consists in the construction and arrangement of parts in the manner hereinafter more fully described.

A is a box or case, having raised ends or side pieces A'. The front part of this box has a longitudinal mortise or recess, denoted by *a*. A rod or shaft, B, is placed longitudinally through the box A, forming an axle for a series of wheels, denoted by C. Each of these wheels consists of a disk, C, affixed to one side of which is a metal plate, denoted by C', provided with a series of thirty circumferential cogs or ratchets, opposite to each of which is a projecting pin, *c*. Each disk forming the wheel C has three recesses, denoted by *e*, in each of which is placed a bent wire spring, *f*, projecting through a slot, *g*, as shown in Fig. 2. Each of the metallic disks C' has a series of circumferentially-arranged projecting pins, *c*, one pin being placed opposite to each cog or ratchet. Three sets of figures, from 0 to 9, are arranged upon the edge of the disks C, the springs *f* projecting through the slots *g* just opposite to the figure 9 on the face of each disk. The number of these disks or wheels may be varied according to the number of ciphers in the sums it is desired to add. In the drawing, I have shown an instrument having six wheels, one of which, C², instead of

having three sets of figures from 0 to 9 on its face, has a series of consecutive numbers running from 0 to 29, thus increasing the capacity of the machine eightfold. To the rear side of the box A is affixed a series of projecting curved metallic springs, D, so arranged as to cover about one-third of the circumference of the disks C, as shown in Figs. 1 and 2. Each of the springs D has a shoulder or offset, *i*, slanting toward that part of the box A to which they are affixed. To the face of each of the springs D is affixed an index consisting of ciphers from 9 to 1, the figure 9 being in the upper and 1 at the lower end of each spring.

The operation of this instrument is as follows: The disks C are first turned back until the spring-pins *f* come against the projecting cams or shoulders *i* of the springs D. Each disk is then turned, the operator commencing either from the right or the left, at his own option, until one of the pins *f* comes opposite to that cipher on the index placed on the springs D which corresponds to the cipher in the amount to be added up. Thus, for instance, if the operator desires to add the sums of 742 and 317, the wheel farthest to the right is turned until the pin *f* comes opposite the cipher 2 on the index. Next, the second wheel from the right is turned until the pin comes opposite figure 4 of its index. Then the third wheel is turned until the pin *f* comes opposite the cipher 7, thus indicating the first amount, 742. The second amount, 317, is indicated in the same manner by first turning the third wheel from the right until the pin comes opposite the figure 3. Next, the second wheel from the right is turned until the pin comes opposite the figure 1 on the index, and, lastly, the wheel nearest the end is turned until the pin comes opposite Fig. 7. By looking through the slot *a* in the front part of the box, the amount of these two sums added (in this case 1059) will appear.

It will be observed that the projecting springs D answer a fourfold purpose: First, they act as springs to keep the wheels or disks from revolving too far or too easily; second, they form the cams or shoulders *i* for retaining the pins *f* of the disks C in the proper position before commencing to add. Third, they

form the indexes to which the ciphers are attached; and, fourth, they cover the numbers or ciphers on the faces of the wheels, so that these can only be seen through the slot or mortise *a* provided in the front part of the box A.

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

1. In an adding-machine, the combination of the notched plate C', having projecting pins *c*, with the disks C, provided with recesses *e* for the spring-pins *f*, the latter projecting through slots *g* beyond the peripheries of disks

C, substantially as and for the purpose hereinbefore set forth.

2. The combination of the disks C C', having spring-pins *f*, with the springs D, having cams *i*, substantially in the manner and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in presence of two witnesses.

JOHN H. MEARS.

Witnesses:

W. R. KENNEDY,
A. A. AUSTIN.