

(No Model.)

2 Sheets—Sheet 1.

J. C. SEYMOUR.

ADDING MACHINE.

No. 391,088.

Patented Oct. 16, 1888.

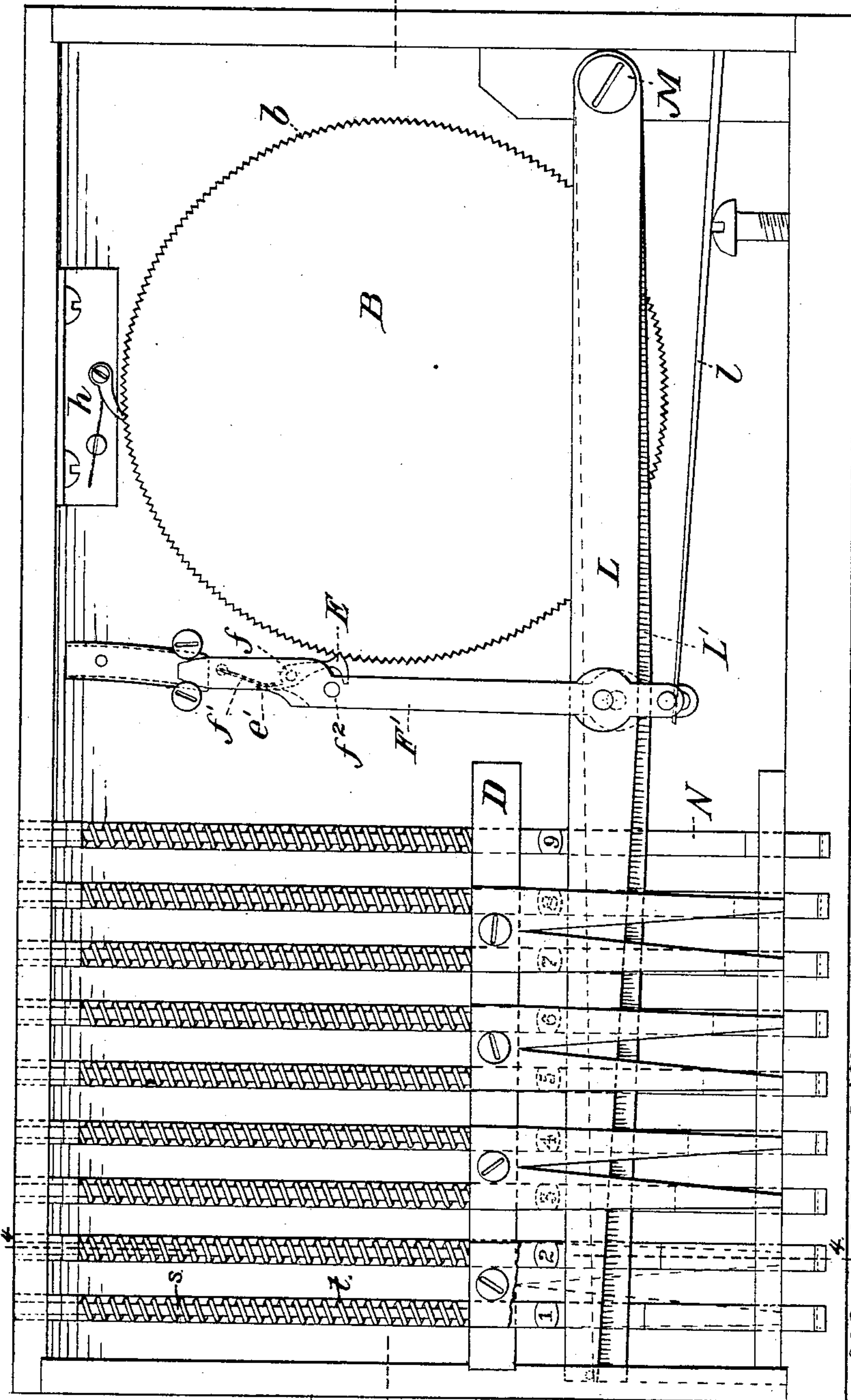


Fig. 1.

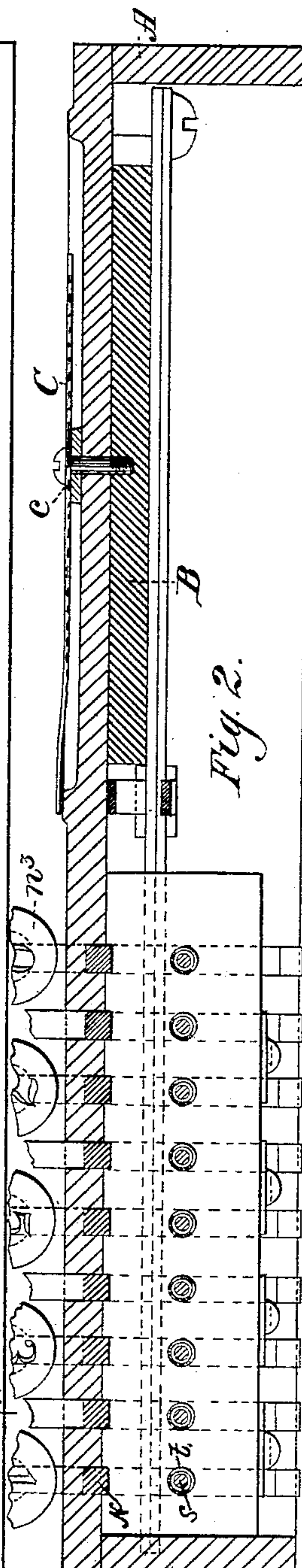


Fig. 2.

WITNESSES.

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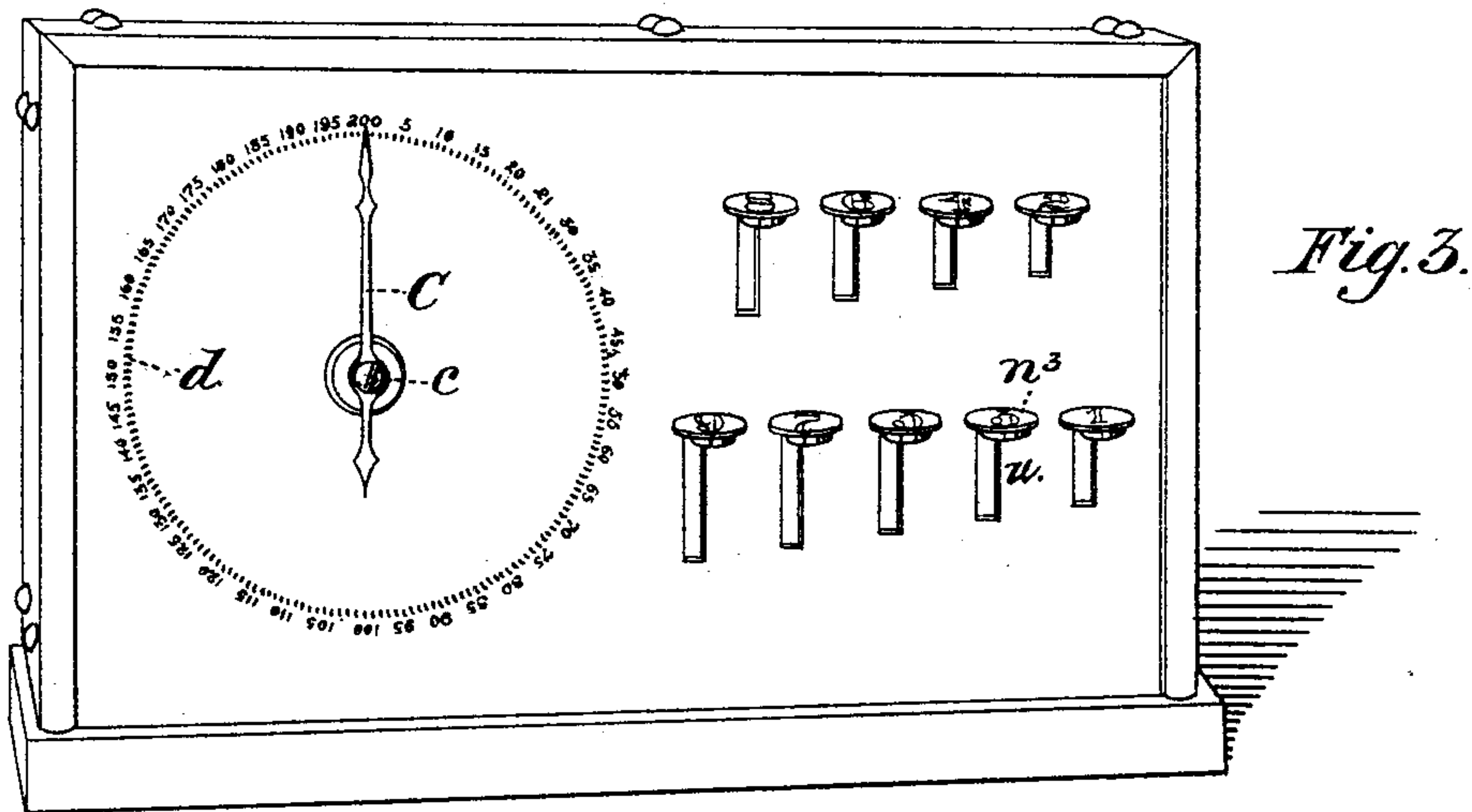


Fig. 3.

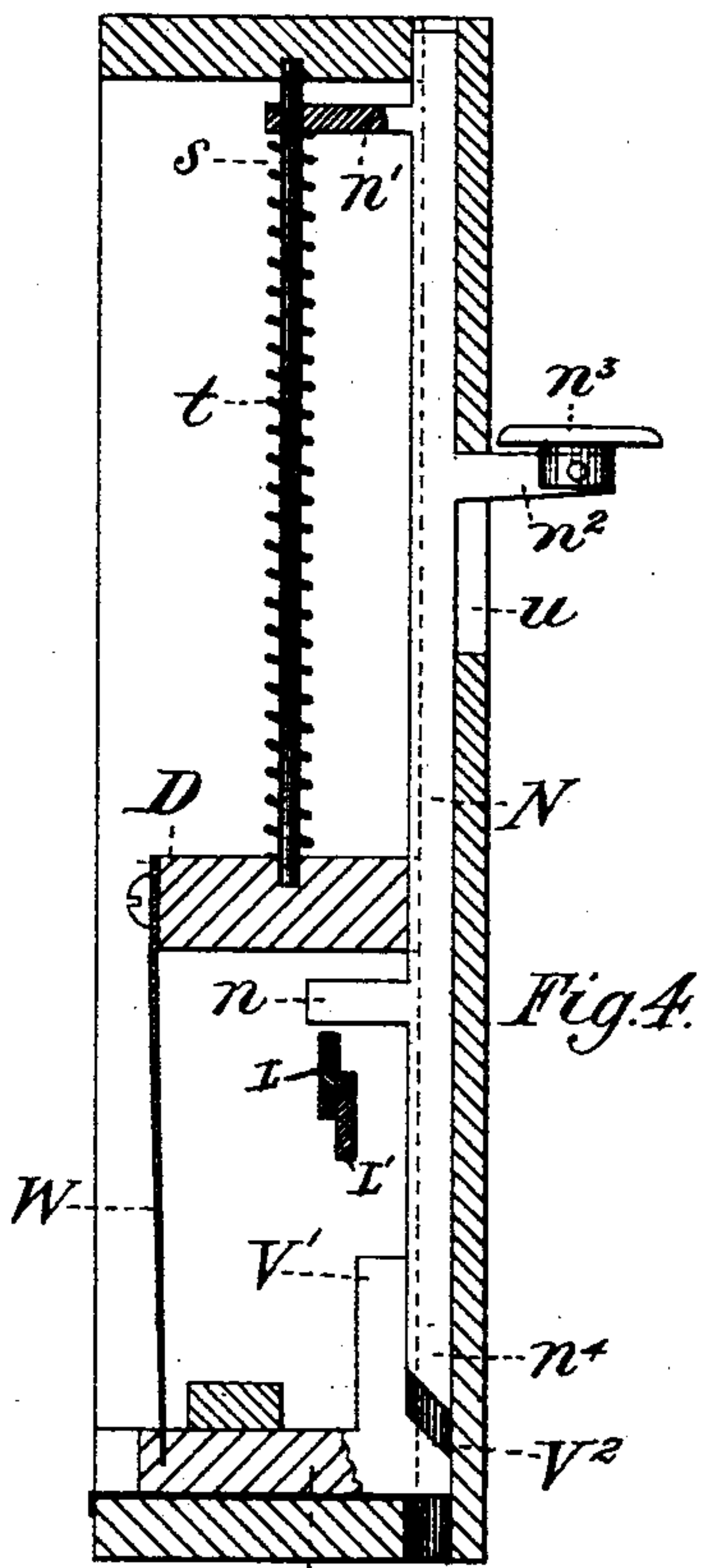


Fig. 4.

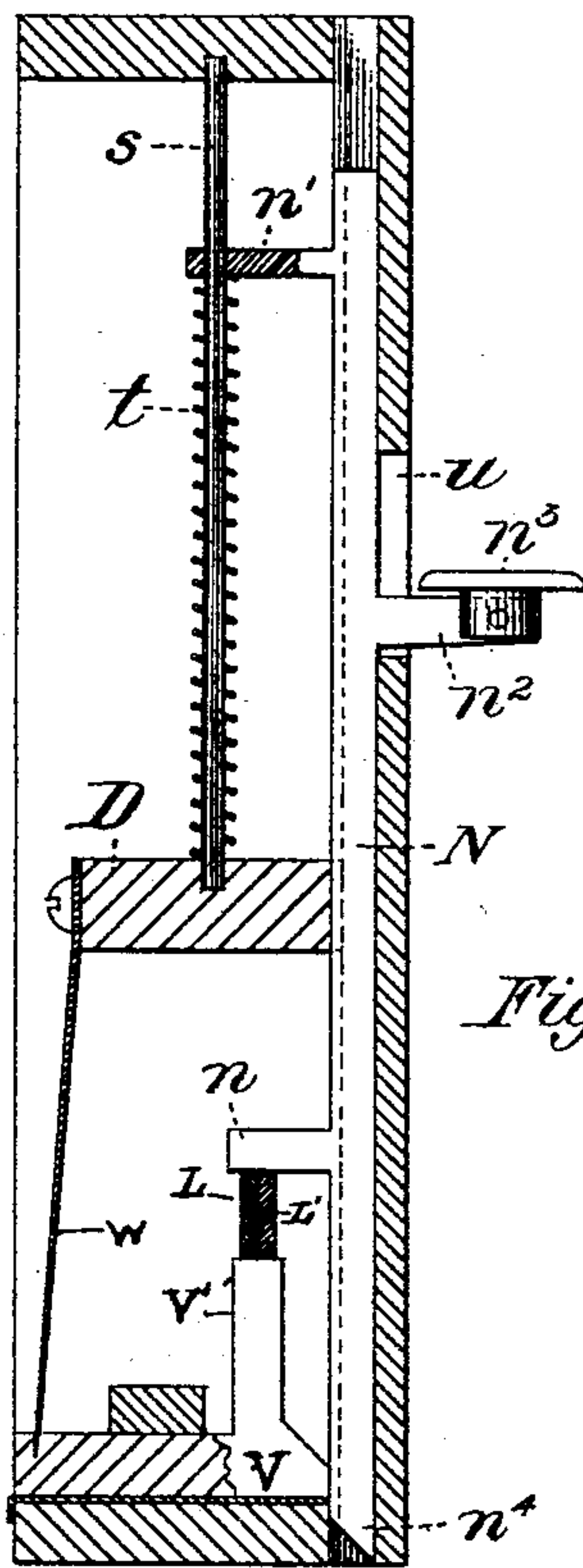


Fig. 5.

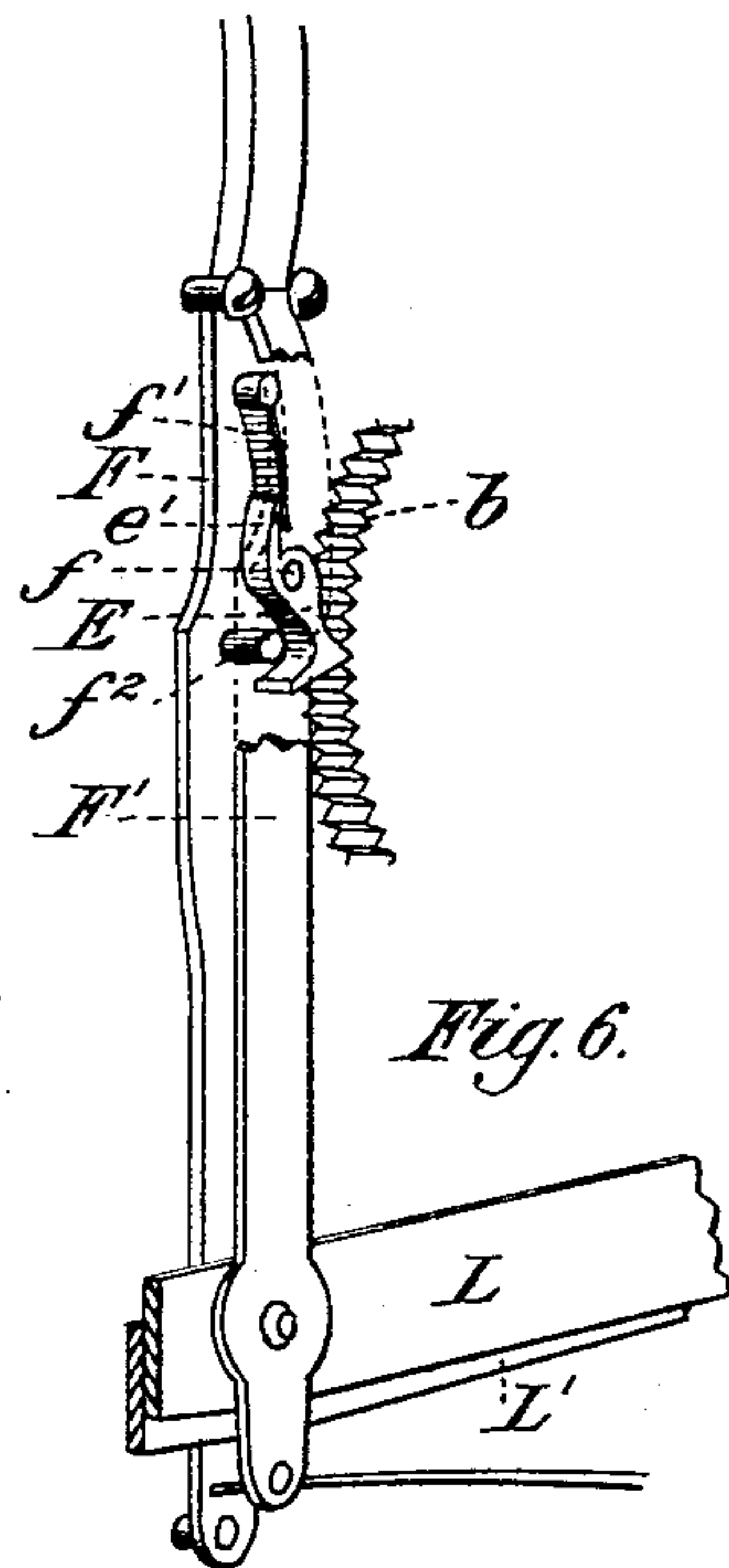


Fig. 6.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES C. SEYMOUR, OF ALLEGHENY, PENNSYLVANIA.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 391,088, dated October 16, 1888.

Application filed June 23, 1888. Serial No. 278,002. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. SEYMOUR, of Allegheny, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Adding-Machines; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which like letters indicate like parts.

Figure 1 is a back view of my adding-machine with the cover removed, showing the working parts. Fig. 2 is a horizontal section taken on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the entire machine. Fig. 4 is a sectional view on the line 4 4 of Fig. 1. Fig. 5 is a similar section showing the different positions of the operative mechanism. Fig. 6 is a detailed view in perspective of the operating-pawl with its attachments and mode of connecting with the operating-levers.

My invention has for its object to provide means for automatically registering the sum total of any series of numbers which it may be desirable to find, and doing this in such a manner that the result may be read from the face of the dial, so that, if desired, long columns of figures may be added up and the result obtained quickly and accurately without the need of any mental labor or the possibility of mistake in the addition; and to this end my invention consists in a case bearing upon its face a dial-plate with a set of divisions or scale of numbers around its circumference and carrying a pointer actuated by a disk within the case, which in turn is actuated and controlled by means of a pawl operated by means of levers in connection with finger-pieces, suitably arranged and numbered, projecting from the face of the case, the disk which carries the pointer being accurately controlled and held firmly in position by the operating mechanism, so as to prevent any play or movement beyond that given to it and desired by the operator.

In order to enable others to more fully understand my invention, I will proceed to describe it in detail in connection with the drawings.

A is the case of the machine, which is of small size, convenient to handle, and may be

held in the hand or set upon a counter or desk.

B represents the disk, provided with teeth *b* around its periphery, and carrying a hand or pointer, C, attached by means of screw *c*.

In Fig. 3, *d* is the outer dial-plate with a suitable scale or set of divisions and numbers, which are pointed off by the hand C when actuated by means of the movement of the disk B.

E is a pawl, which engages the teeth *b* of the disk B, this pawl E being pivoted to the bar F by pin *f*. The bar or arm F is also provided with a spring, *f'*, pressing against the upper end, *e'*, of the pawl E, forcing it into engagement with the teeth *b*. The bar or arm F, provided with an inwardly-projecting pin, *f''*, slides up and down, being secured between suitable guides at the top, and at the bottom by attachment to the lever L, and being normally forced upward by the tension applied at its lower end by the spring *l*.

At the top of the case, as shown in Fig. 1, is placed a stop-pawl, *h*, held in engagement with the teeth *b* by a spring, to prevent any backward movement of the disk.

L and L' are levers pivoted by screw M at one end, attached, respectively, to the bars F and F', and so arranged as to be acted upon by the various projections *n* of the bars N, which are provided at the upper end with inwardly-projecting lugs *n'*, through which pass the upright stems *s*, having coiled around them the spiral springs *t*, which rest at their lower ends upon the bar D, thus giving pressure upwardly against the lugs *n'* of the bars N sufficient to restore them to their place, as shown at Fig. 4, after being pressed down, as shown in Fig. 5, by means of the numbered finger-piece *n''*, which is attached to the arm *n''*, projecting outwardly from the bar N through the slot *u*.

The operation of my device is as follows: The finger-pieces bear the numerals from 1 to 9, and pressure upon one of the finger-pieces *n''* will bring down the bar N from its normal position, as shown in Fig. 4, to that shown in Fig. 5. When the bar N comes down, the projection *n* strikes first the lever L, Figs. 4 and 5, which in turn brings down the outer bar, F', until the pin *f''* falls snugly in behind the pawl E, holding it closely in engagement with the teeth of the disk. The bar N, going on

down, next strikes the lever L' , and in its continued progress will then take with it the arms F and F' , and consequently the pawl E , thus revolving the disk. The amount of revolution
 5 given to the disk is accurately measured and adjusted by the comparative height of the stops V' of the L -shaped slides V , provided with wedge-faces V^2 . The height of the stop V' , intended for the bar N , connected with the
 10 finger-piece which counts for the numeral 1, will be sufficient to permit the disk's turning just one notch, and the stop for finger-piece 2 will be just enough to admit of its turning two notches, and so on until the last or lowest stop
 15 for the numeral 9 will permit the disk to be turned nine notches. When the pressure on the finger-piece is removed, the bar N will be returned to place by the upward pressure of the spring t , and the inward pressure of the
 20 spring W at the same time forces the slide V back into its normal condition.

Having thus described my invention, I claim herein and desire to secure by Letters Patent of the United States—

- 25 1. The combination, in an adding-machine, of a revolving disk, B , an indicator, C , carried thereby, the pawl E , arms F and F' , and levers L and L' , whereby the disk and indicator are operated, substantially as specified.
- 30 2. The combination, with the revolving disk

B , of the indicator C , the pawl E , arms F F' , levers L L' , stop pawl h , and the pin f^2 on the arm F^2 , whereby the disk is operated and held at proper intervals, substantially as specified.

3. In an adding-machine, the combination, 35 with the rotating disk B , of the upright arms F F' , the arm F' carrying a pin, f^2 , the pawl E , secured thereto, the levers L L' , the bars N , and finger-pieces n^3 , whereby the disk is operated, as and for the purpose specified. 40

4. In an adding-machine, the combination 45 of the bars N , having inwardly-projecting lugs n at their lower ends, and similar lugs, n' , at their upper ends, and outwardly-projecting lugs n^2 , the finger-pieces n^3 , operating levers L L' , the stems s , springs t , and revolving disk B , all arranged substantially as and for the purpose specified.

5. In an adding-machine, the combination 50 of the sliding plates V , provided with wedge-faces V^2 , the L -shaped stops V' , the bars N , the levers L L' , and the springs W , substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand.

JAMES C. SEYMOUR.

Witnesses:

C. M. CLARKE,
P. M. ADAMS.