

(No Model.)

H. J. RICHARDSON.  
Instrument for Computing Time.

No. 235,703.

Patented Dec. 21, 1880.

Fig 1.

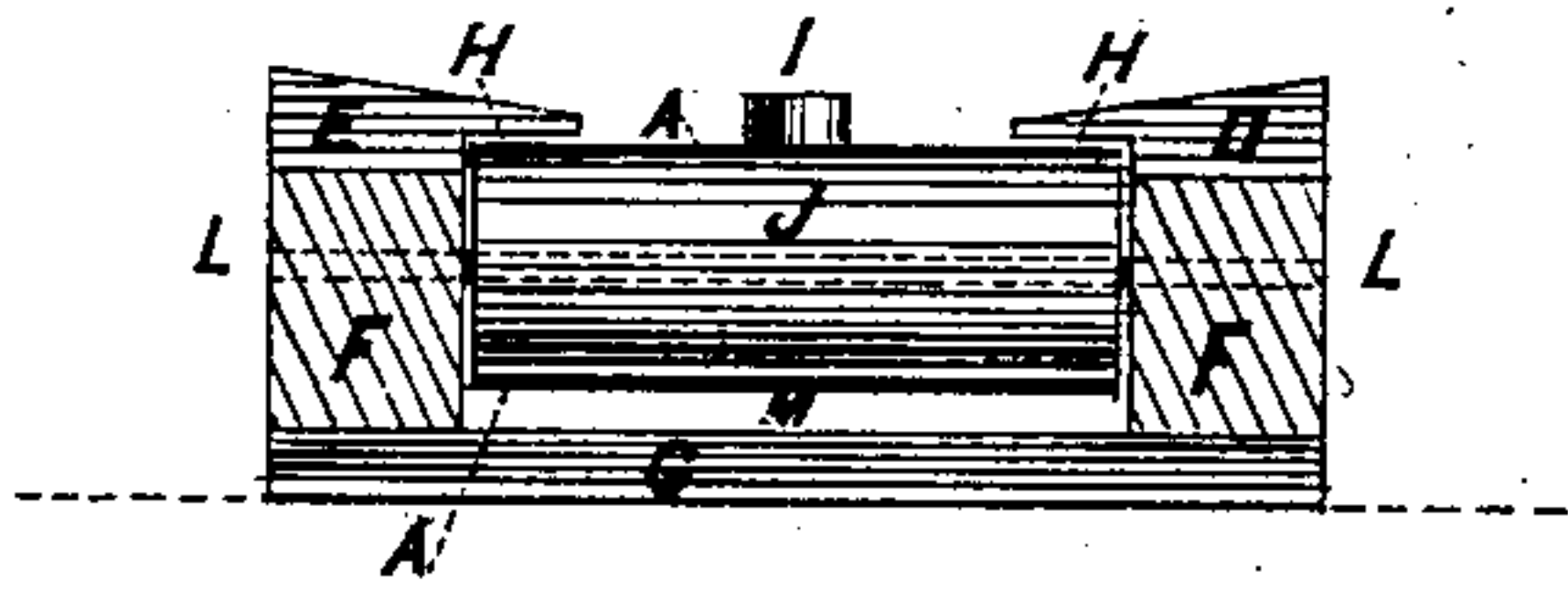


Fig 2.

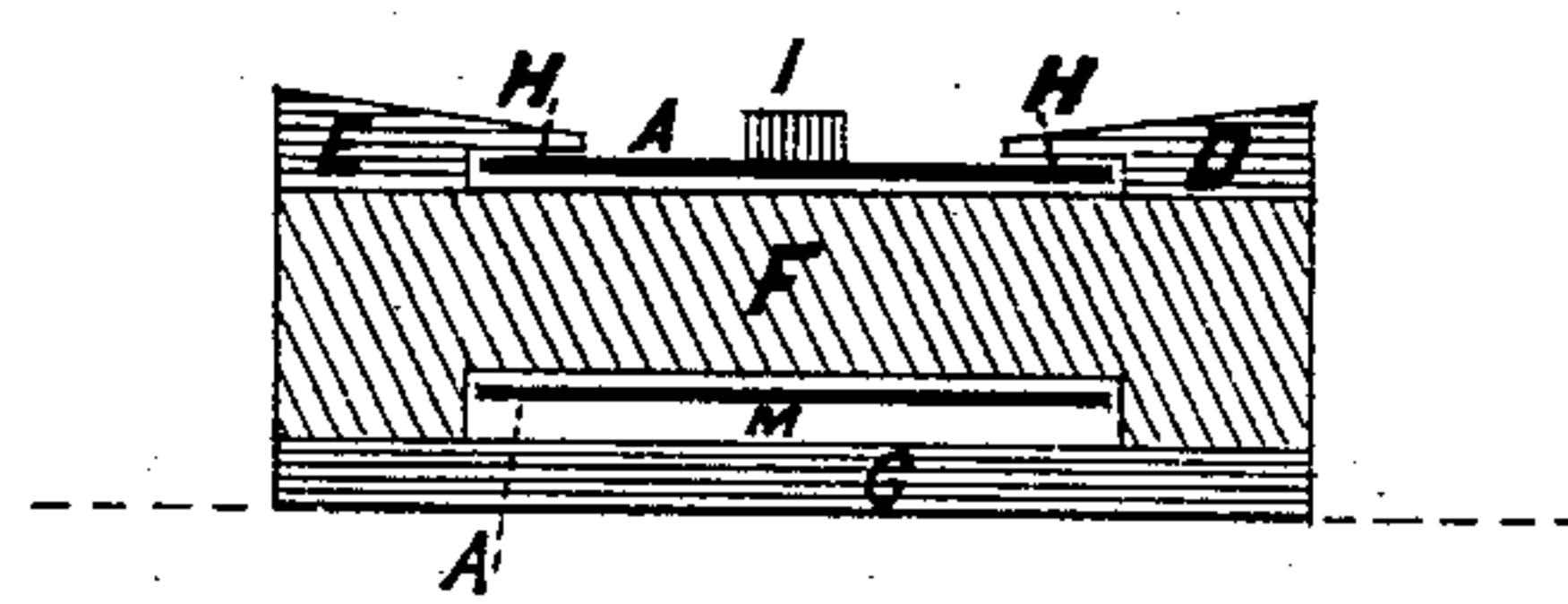


Fig 3.

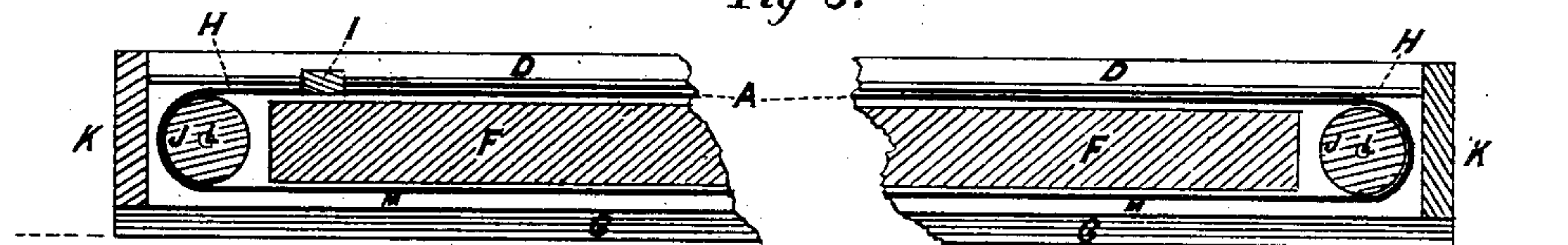


Fig 4.

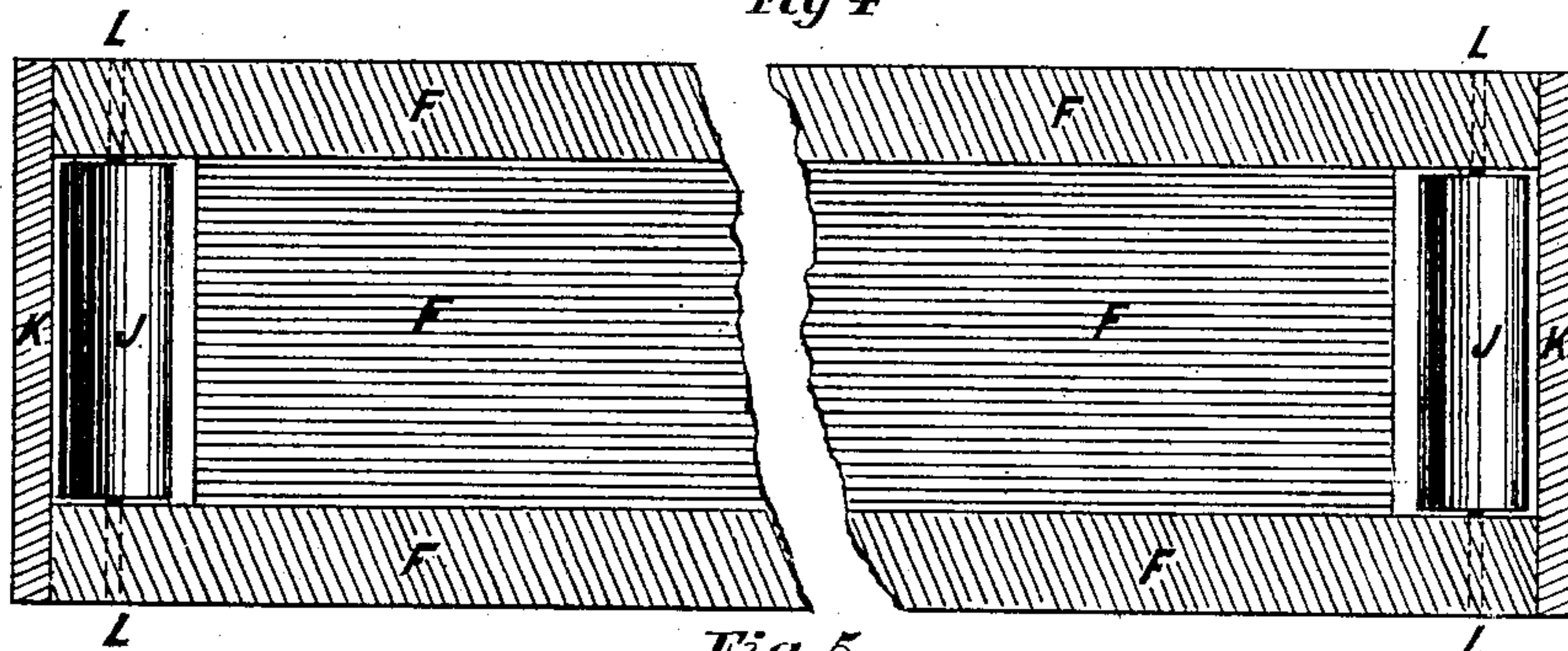


Fig 5.

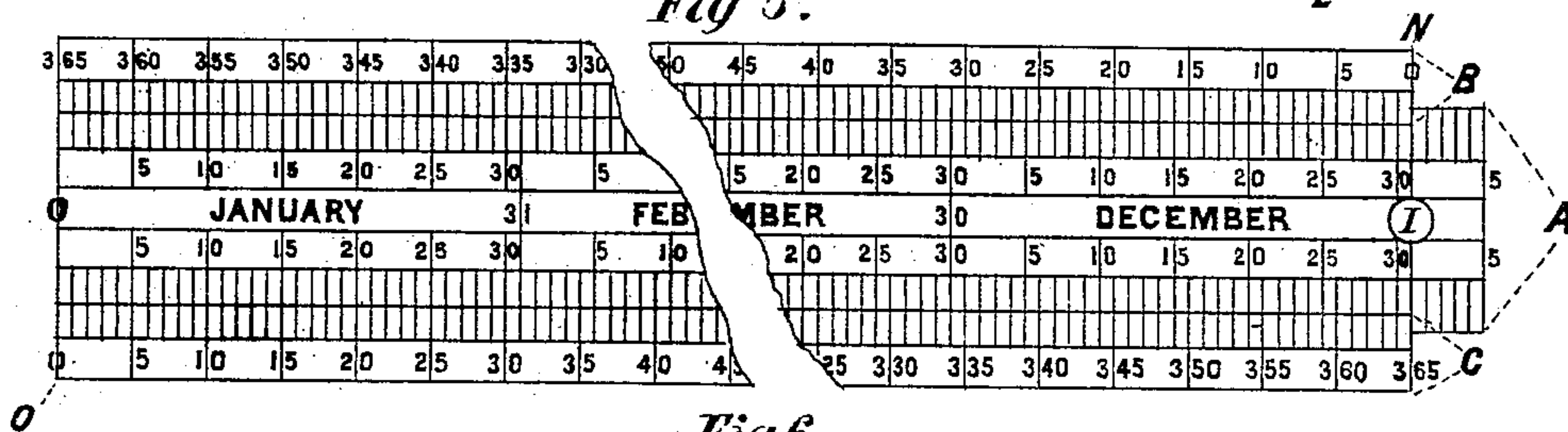
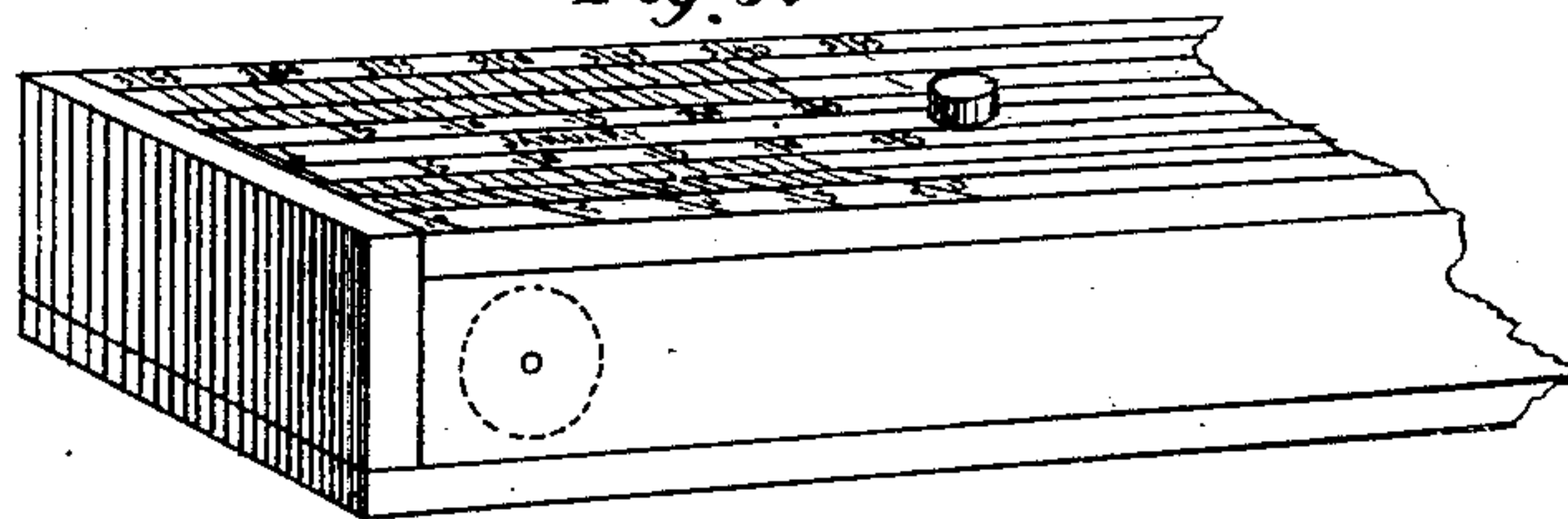


Fig 6.



Witnesses;

George M. Horton  
Frank Soutel

Inventor;

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# UNITED STATES PATENT OFFICE.

HENRY J. RICHARDSON, OF BROOKLYN, NEW YORK.

## INSTRUMENT FOR COMPUTING TIME.

SPECIFICATION forming part of Letters Patent No. 235,703, dated December 21, 1880.

Application filed July 10, 1880. (No model.)

*To all whom it may concern :*

Be it known that I, HENRY J. RICHARDSON, of the city of Brooklyn, county of Kings, and State of New York, have invented a Machine for Measuring Days, of which the following is a specification.

This invention is fully shown in the accompanying drawings, making part of this specification, in which—

10 Figure 1 is an end view (both ends being alike) of the invention, the end piece being removed in order to show the roller J. L L is the spindle upon which the roller J revolves. A A is an endless ribbon or belt, made of cloth-lined paper or other suitable material. This endless belt A A passes through the grooves H H, round the roller J, and through the slot M. D, E, F, and G are made of wood or other material, and are firmly fastened together. In the drawings, Fig. 1, the endless belt A A is cut above and below the roller J, in order that the roller J may be shown. The endless belt A has marked or printed upon it, in regular order, the names of every month contained in two years, and the space occupied by each month is equally divided by means of lines, in such a manner that all the days in the two years aforesaid are marked on the endless band A at equal distances apart, and enough of the lines are numbered in such a manner that the lines indicating the months and days of the month can be readily singled out. I is a stud, made of wood or other suitable material, securely fastened to the endless band A, in order that the endless band A may be easily shifted. Upon the top of the piece D is a scale, B, Fig. 5, and upon the top of the piece E is a scale, C, Fig. 5. These scales B and C are divided into three hundred and sixty-five (365) spaces, the lines dividing these spaces being at exactly the same distance apart as are the lines on the endless band A. On the scales B and C enough of the lines are numbered in such a manner that the number appropriate to any line can be easily determined. On the scale B the numbers run from right to left, and on the scale C the numbers run from left to right.

Fig. 2 is a vertical section, made at a point midway between the ends, of the invention.

Fig. 3 is a longitudinal vertical section, in which K K are end pieces, made of wood or other suitable material. The two end pieces, K K, and the bottom piece, G, could be dispensed with, as they are only intended to protect the endless belt A from injury.

Fig. 4 is a longitudinal horizontal section, the endless band A being removed in order to show the rollers J J.

Fig. 5 shows portions of the endless belt A and the scales B and C in their relative positions.

Fig. 6 is a perspective view of one end of the invention.

In the drawings like parts of the invention are pointed by the same letters of reference.

The object of my invention is to aid book-keepers and others in ascertaining the number of days from any given day to all other days within a period of one year, either prior or subsequent to the said given day.

The manner of using my invention is as follows: To find the number of days from any given day to all other days prior to the given day, move the endless band A by means of the stud I until the line representing the given day is opposite the cipher N on scale B, Fig. 5, and exactly opposite the lines on the endless band A will be shown, on the scale B, the lines indicating the number required. To find the number of days from any given day to all other days subsequent to the given day, proceed exactly as prescribed in preceding sentence, using scale C and the cipher O, Fig. 5, instead of scale B and the cipher N, Fig. 5. In leap-year proper allowance must be made for the extra day in February.

By this method of finding the number of days there will be a great saving of time to book-keepers, accountants, discount-clerks in banks, and all others having to calculate interest or to average accounts.

The invention can also be used for quickly determining the dates when notes drawn by days fall due.

In an endless belt passing round rollers, as described in this specification, I use what I consider the best method of obtaining the desired result; but instead there could be used a similar belt, not endless, fastened to a roller

at each end and wound up on the said rollers; but the principle is the same, and such a belt is regarded by me as the equivalent of an endless belt.

5 I am well aware that endless ribbons have been used heretofore in calculating-machines, and also that by means of sliding scales time has been computed within the limits of a calendar year. I therefore claim neither of these  
10 devices as my invention; but

What I claim is—

An instrument for computing time consist-

ing of an endless ribbon having the months and days for two entire calendar years suitably marked upon it, in combination with two 15 graduated scales, one containing the days in a year numbered from right to left and the other containing the days in a year numbered from left to right, substantially as described, and for the purpose set forth.

H. J. RICHARDSON.

In presence of—

FRANK LOUTREL,  
GEORGE W. HORTON.