

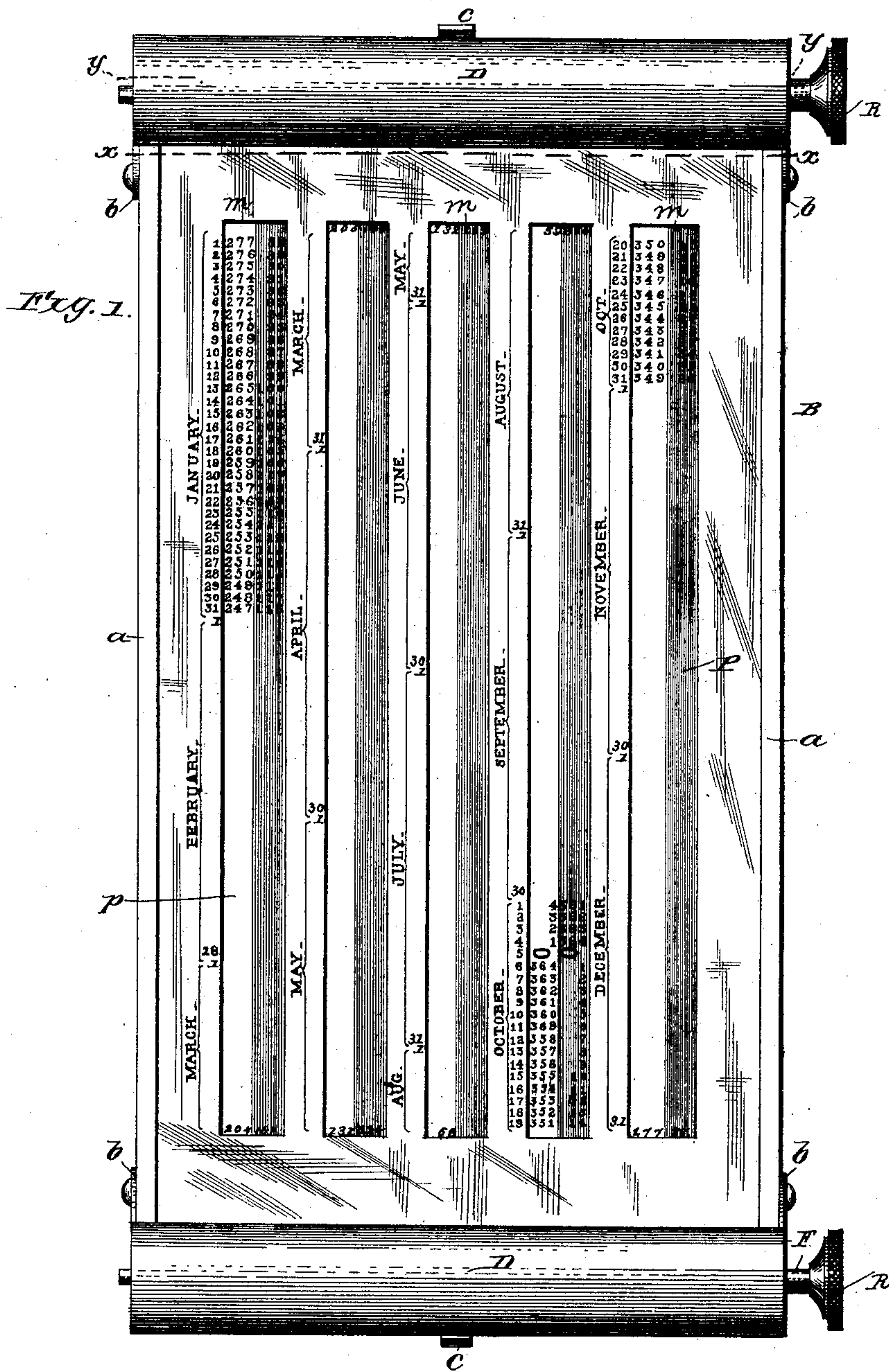
(No Model.)

2 Sheets—Sheet 1.

W. WOOD.
TIME CALCULATOR.

No. 370,364.

Patented Sept. 20, 1887.



Witnesses

Edwin L. Jewell,

Jos. A. Ryan

Inventor

Wm. Wood.

By His Attorney

W. A. Redmond.

(No Model.)

2 Sheets—Sheet 2.

W. WOOD.
TIME CALCULATOR.

No. 370,364.

Patented Sept. 20, 1887.

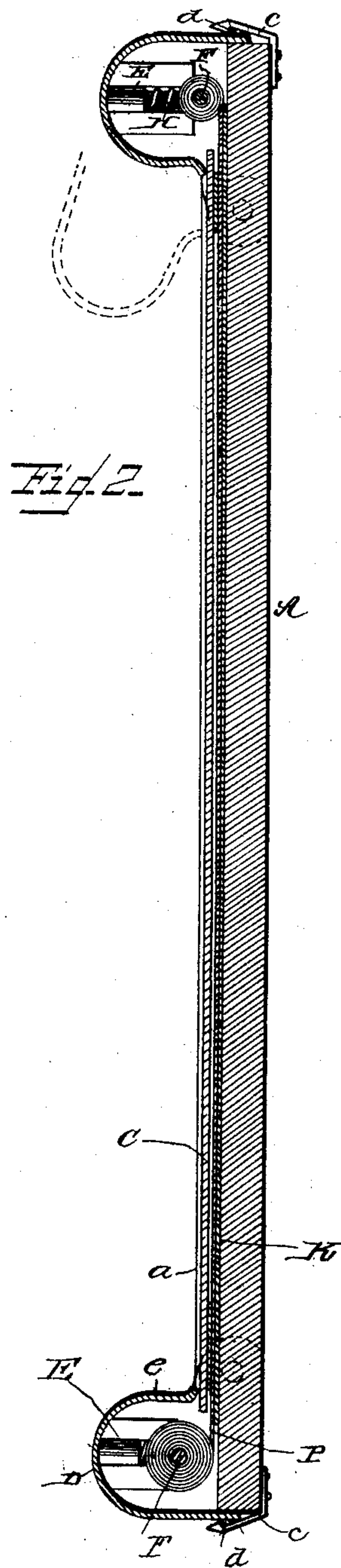


Fig. 2.

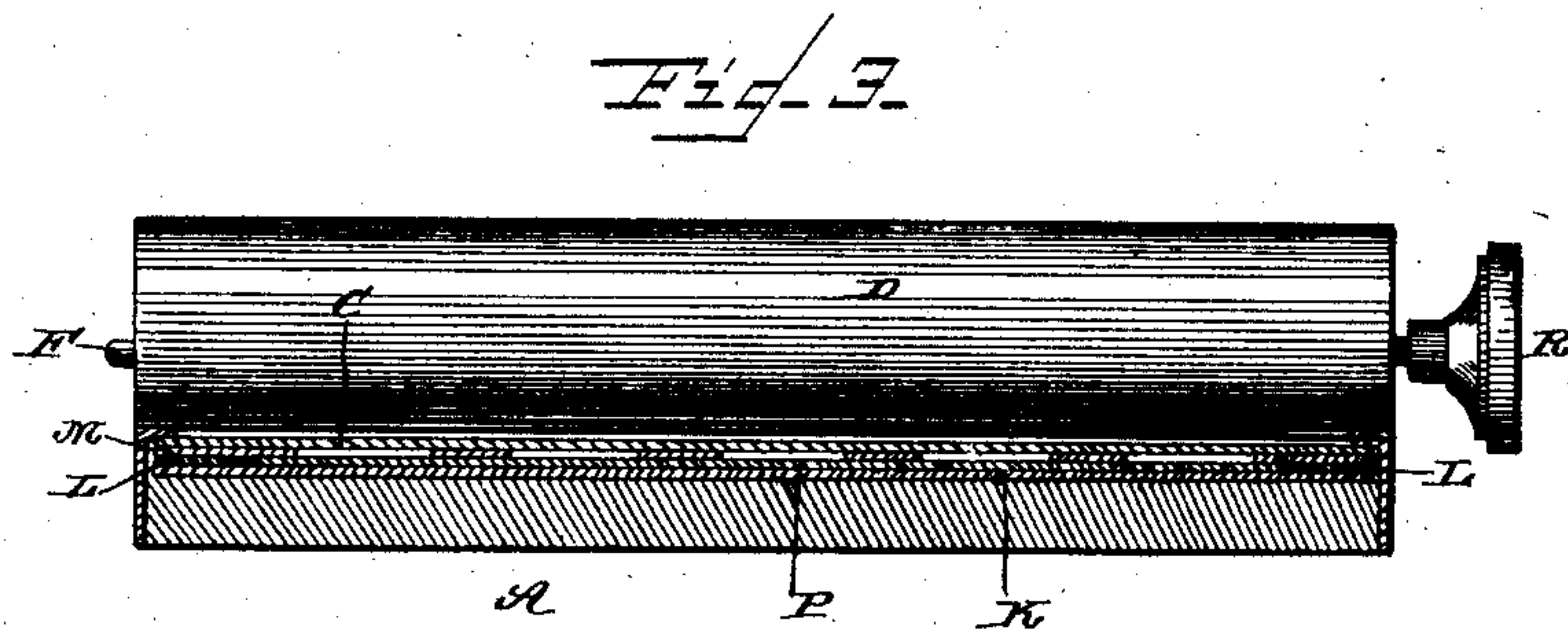


Fig. 3.

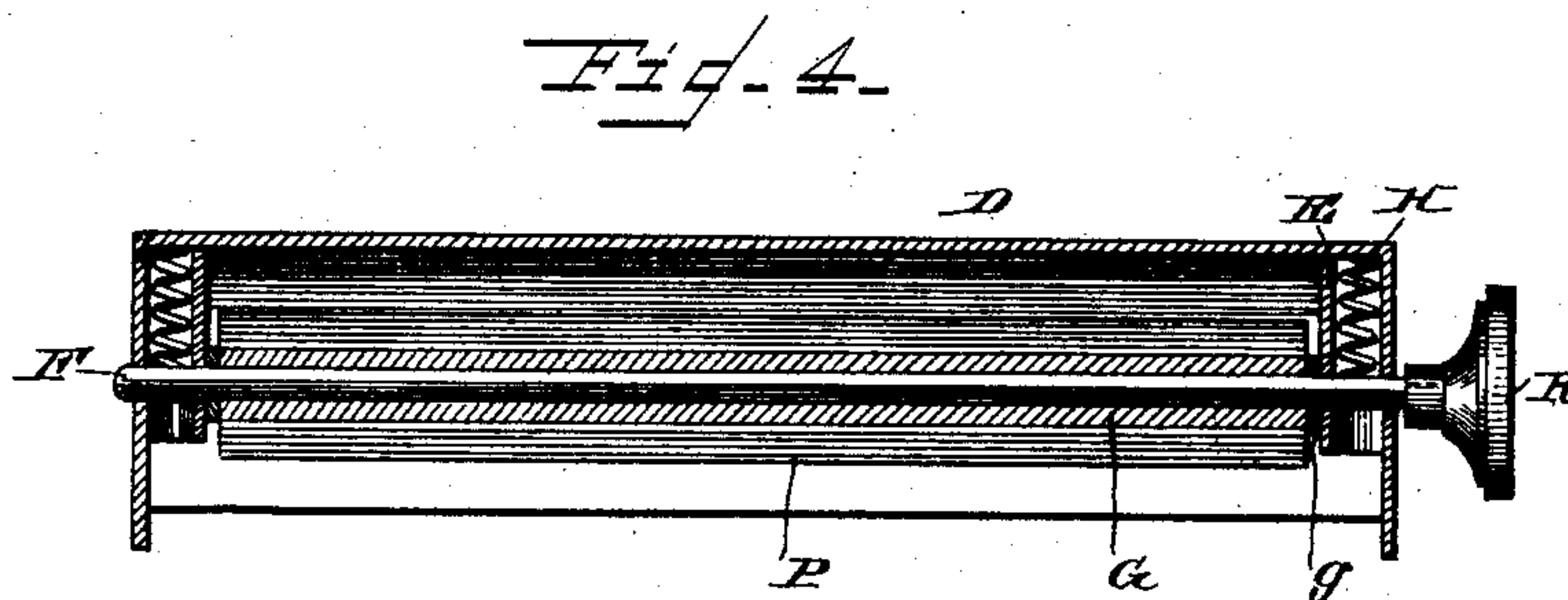


Fig. 4.

Witnesses
Edwin L. Yewell,
Jos. A. Ryan

Inventor
Wm. Wood
By His Attorney
W. A. Redmond

UNITED STATES PATENT OFFICE.

WILLIAM WOOD, OF GALVESTON, TEXAS.

TIME-CALCULATOR.

SPECIFICATION forming part of Letters Patent No. 370,364, dated September 20, 1887.

Application filed October 18, 1886. Serial No. 216,515. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WOOD, a citizen of the United States, residing at Galveston, in the county of Galveston and State of Texas, have invented certain new and useful Improvements in Time-Calculators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to time-calculators; and it has for its object to provide a simple, inexpensive, and durable machine whereby the aggregate number of days from any one date to another within the space of one year may be accurately and expeditiously ascertained; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the device; Fig. 2, a longitudinal section of the same; Fig. 3, a cross-section on the line *x x*, Fig. 1; and Fig. 4, a like section on the line *Y Y*, same figure.

Similar letters refer to similar parts throughout all the views.

A represents the body or back of the frame, which in this instance is of wood; but it may be of any suitable material; and B, the metal strips, secured to the side edges of the body A by screws or nails, when said body is of wood, and if metal, they may be formed integral therewith or secured thereto in any desired manner. The upper edges of the metal strips are bent or lapped at right angles to their bodies to form flanges or lips *a*, beneath which flanges the edges of the calendar M and a pane of glass, C, are inserted and held in place.

D represents two metallic receptacles or holders for the time-table P. As clearly shown in Fig. 2, these holders are semi-cylindrical in cross-section, and one side extends down to and slightly beyond the upper surface of the body A, to which they are loosely or pivotally attached at each end by means of screws passing through the lugs *b*, which project from said holders, so that they may be turned or thrown up when it is desired to remove the glass C or gain access to the calendar and time-table. Spring-metal catches *c* are secured to each end of the body A and engage projec-

tions *d* on the holders D to hold the same securely in place. The opposite sides, *e*, of the holders are shorter and have their edges turned outward slightly to afford ample room underneath the same for the calendar, glass, &c., and permit the easy removal of the same when the holder is raised, as indicated by dotted lines in Fig. 2. At each end the holders are slotted to receive the axles F of the rollers G, which carry the time-tables, and on the inner sides of the ends boxes E are formed, either integral with said ends or soldered or brazed thereto, said boxes being slotted to correspond with the slots in the ends. In each of these boxes a spiral spring, H, is inserted so that its end will bear against the axle F outside of the roller G, a metal washer, *g*, being interposed between said rollers and boxes to lessen the friction.

To the rollers G, which are formed, preferably, of compressed paper, the ends of the time-table are secured in any desired manner, so that it may be wound or unwound on said rollers when the buttons R on the ends of axles F are turned.

The time-table P works between the calendar M and a sheet of paper, card-board, or any other suitable material, K, the side edges of the time-table and calendar being secured to a strip of paper or other material, L, interposed between them, but having their end edges free, so that the time-table may work easily between them.

The calendar M, as clearly shown in Fig. 1, has five slits or openings, *m*, formed therein at equal distances apart and extending nearly its entire length, through which the numbers on the time-table beneath may be readily seen, and along the sides of these openings are printed or otherwise marked the names of the several months of the year from January to December, both inclusive, beginning with January at the upper left-hand corner of the calendar and ending with December at the lower right-hand corner. Opposite the names of the months the number of days contained in each are printed in rotation, the first column containing the whole number of days in January and February and the first fourteen days of March, seventy-three days in all, and each of the other columns containing a like number—seventy-three. In the drawings only the months

of January and October are numbered in full, the others having merely the first and last days of each month shown.

Referring again to the time-table P, which
5 may be of any desired flexible material—such as paper, either plain or lined with muslin or cloth or silk—ten columns or rows of figures are printed or marked thereon, the rows on
10 the left-hand side of each column being in black ink and those on the right-hand side in red ink, preferably; but they may be of other colors, if desired, black and red being preferred simply because of the great contrast between them; or only one color may be used,
15 as in the drawings, where the rows on the right-hand side are formed on surface shading, in which case one row will be printed in heavier type, so as to better distinguish between them.

The first column on the left-hand side begins
20 with the character or cipher 0, (as shown in the fourth opening.) Then follows the number 364, then 363, and so on down in regular rotation until the numeral one (1) is reached, when another cipher 0 is printed, and then 364, and
25 so on down to 293, when the first column ends, there being in all four hundred and thirty-six numbers and two ciphers in this column. The second column begins with 292 and runs to the numeral one, (1,) then a cipher, and then 364,
30 and so on, each of the left-hand columns in the four (including the second) remaining columns containing four hundred and thirty-seven numbers and one cipher. The first row in the right-hand column contains four hundred and thirty-
35 six numbers and two ciphers, the ciphers being opposite the ciphers above described and the numbers being reversed—that is, they are made to read from top to bottom, beginning with the numeral one, (1.) The second, third,
40 fourth, and fifth rows on the right-hand side each contain four hundred and thirty-seven numbers and one cipher, no one of which is higher than three hundred and sixty-four. In the drawings the top and bottom numbers
45 which would show with the ciphers in the fourth opening at "October 5" are only shown, it not being deemed necessary to fill in all the numbers.

To ascertain the number of days between

two dates, all that is necessary to be done is to
50 turn one of the buttons R, thus winding the time-table until the ciphers in the slit or opening alongside or to the right of the month containing the date from which it is
55 desired to count are brought opposite that date, when the desired number of days will be found opposite the other date in the left-hand row, if in the past, and in the right-hand row if in the future. For example, it
60 being desired to ascertain the number of days, including the day counted from, between "October 5" and "January 16" last the ciphers are brought opposite "October 5," as in the
65 drawings, and in the left-hand column of figures opposite "January 16" will be found the aggregate number—that is, 262; if in the future, the number in the right-hand row opposite will give it—thus, 103. In the case of leap-year one day is added to the aggregate number.

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

1. In a device for computing time, the combination of the body A, metal strips B, having flanges *a*, the metal holders D, pivotally
75 secured to said body, spring-catches *c*, projections *d*, the axles F, rollers G, springs H, washers *g*, buttons R, a time-table, P, calendar M, and glass C, substantially as described.

2. In a device for computing time, substantially such as described, the combination of the
80 calendar M, having the slits *m*, the names of the months and the days thereof for one calendar year being printed thereon alongside said slits, the time-table P, having the ciphers
85 0 0 and five columns of figures of two rows each marked thereon, running from one (1) to three hundred and sixty-four (364) in regular rotation, being the days of the year, minus
90 one, said rows being placed in reverse order or read in opposite directions, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM WOOD.

Witnesses:

I. LOVENBERG,
J. LIEBERMAN.