

No. 767,181.

PATENTED AUG. 9, 1904.

A. W. STEELE.
MECHANICAL CALCULATING DEVICE.

APPLICATION FILED MAR. 7, 1904.

NO MODEL.

4 SHEETS—SHEET 1.

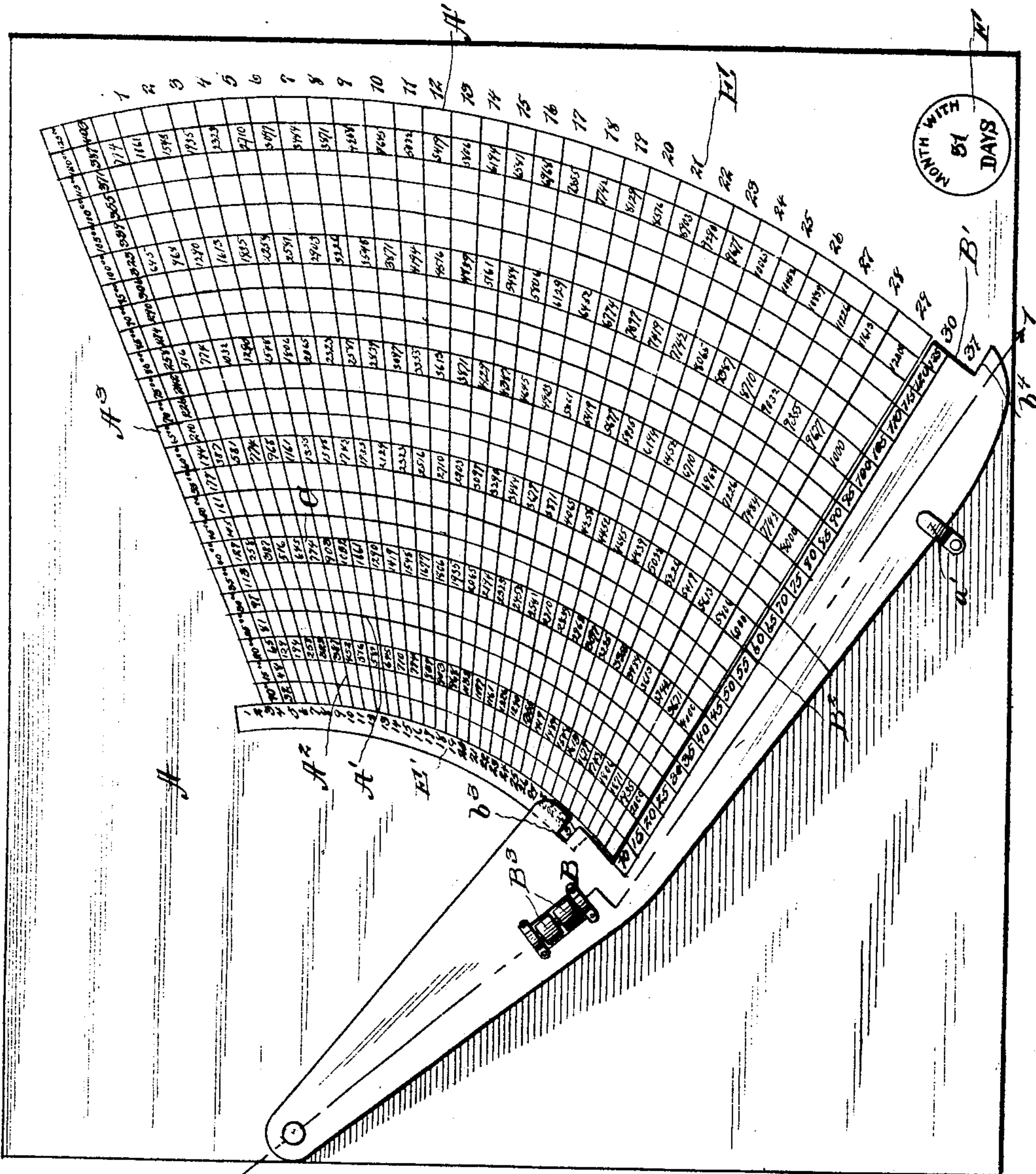


Fig. 1.

Witnesses

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4 SHEETS—SHEET 2.

Fig. 2.

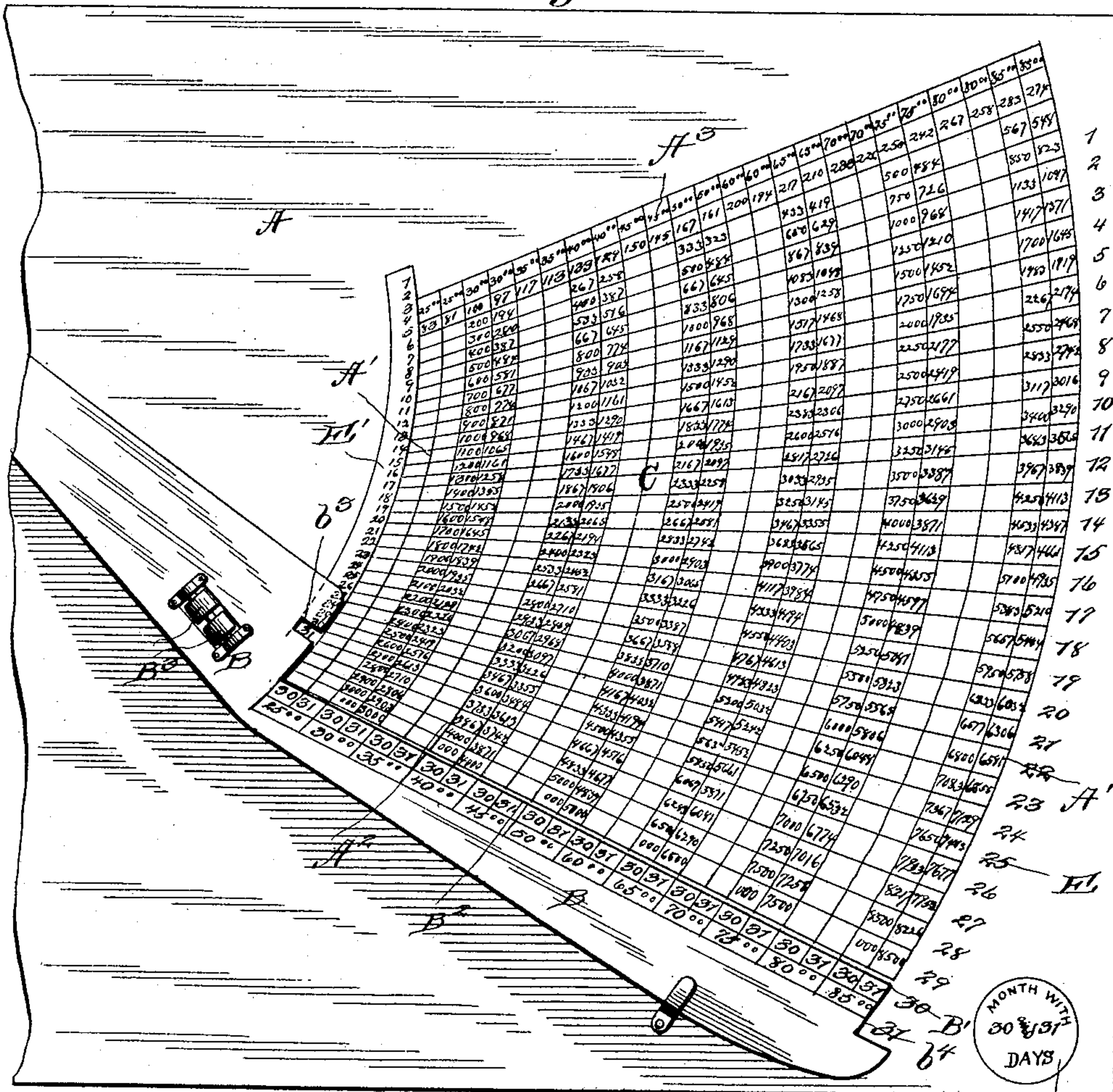
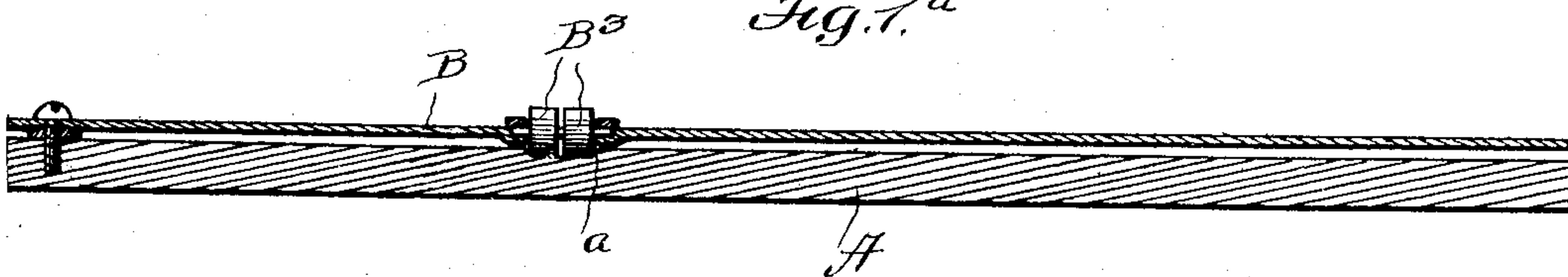


Fig. 1.^a



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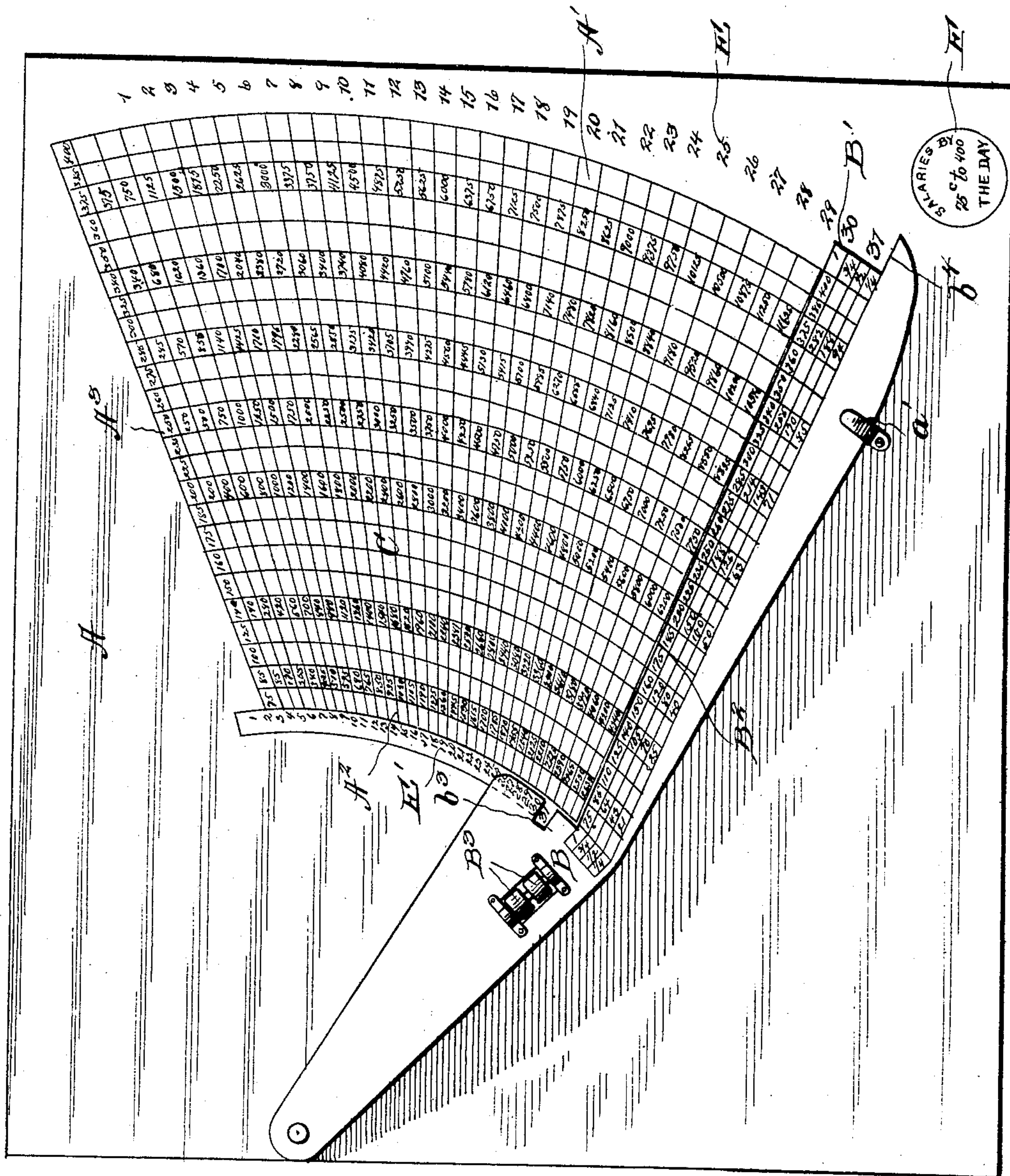


Fig. 3.

Witnesses

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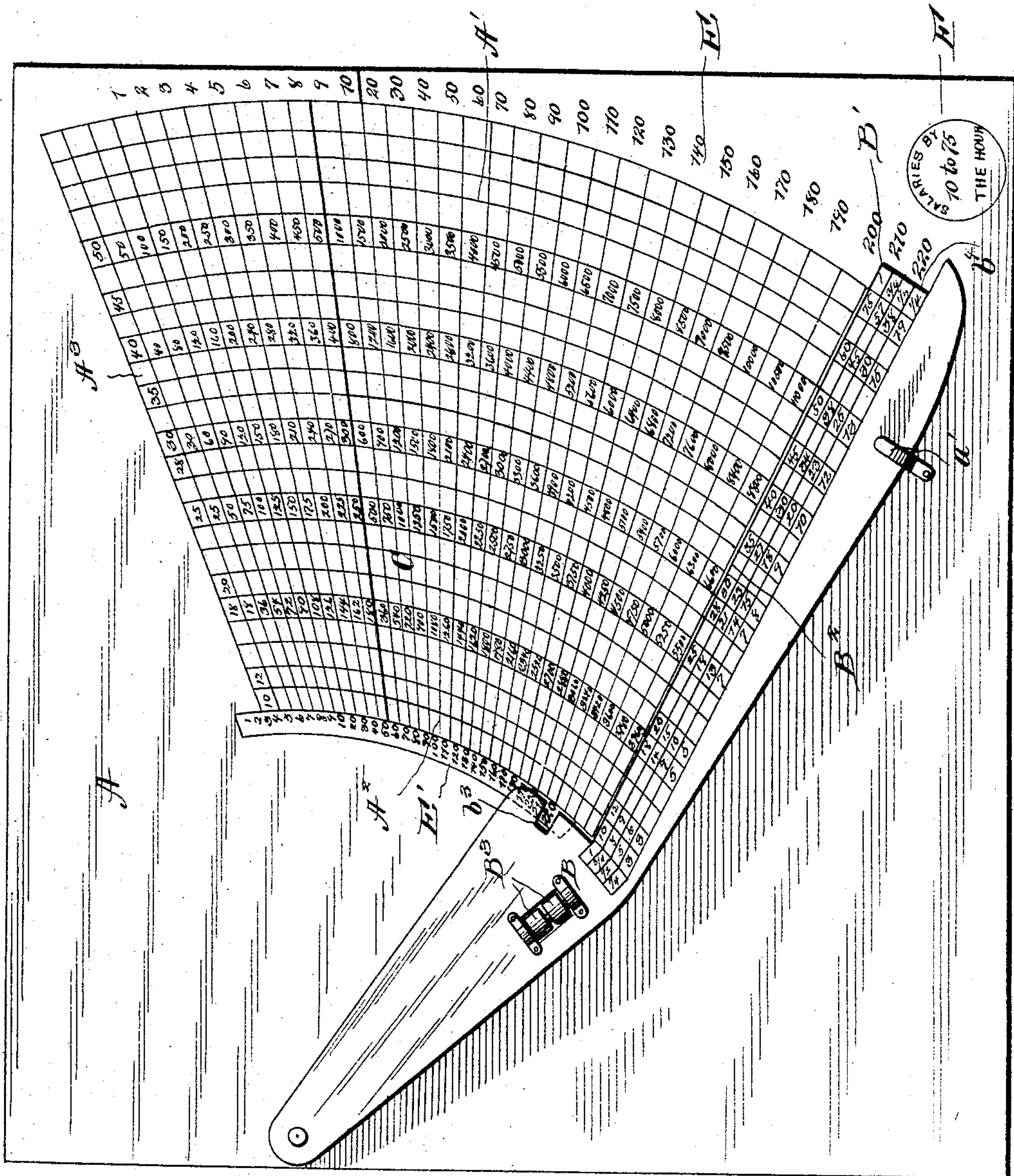
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4 SHEETS—SHEET 4.



Witnesses

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Fig. 4.

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UNITED STATES PATENT OFFICE.

ALEXANDER W. STEELE, OF SALT LAKE CITY, UTAH.

MECHANICAL CALCULATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 767,181, dated August 9, 1904.

Application filed March 7, 1904. Serial No. 196,922. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER W. STEELE, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake, State of Utah, have invented certain new and useful Improvements in Mechanical Calculating Devices, of which the following is a description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to a device for mechanically calculating, and is especially adapted to figuring salaries and wages of employees for partial periods where they are paid by the hour, the day, the week, or the month.

The object of this invention is to furnish an improved device for obtaining the results without the labor of making the calculation by division, multiplication, and addition, and which shall be simple in construction, convenient in use, and accurate in results. The invention, however, is not to be limited to the particular embodiment shown and described, but is open to such changes and modifications as may fall within the scope of the claims.

The above object I accomplish by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a plan of the improved calculator arranged for calculating the per diem salaries or wages at rates of from ten dollars to one hundred and twenty-five dollars per month for months with thirty-one days. Fig. 1^a is a detail sectional view on line 1 1, Fig. 1. Fig. 2 is a similar view with the columns arranged for calculating the per diem salaries or wages for months having thirty days and months having thirty-one days. Fig. 3 is a similar view with the columns arranged for calculating the wages paid by the day and fractional parts thereof. Fig. 4 is a similar view of the calculator arranged for calculating wages paid by the hour.

A designates in the several figures the board, formed of any suitable material and provided with vertically-disposed concentric curved lines A' intersected by transversely-disposed lines A², which are at an angle to the radius of the lines A', the lines A² radiating from a common center which is a considerable dis-

tance below the center from which the arcs A' are drawn. Thus columns of spaces are formed in which the tables C are arranged. This arrangement of the lines A² affords a greater space at the left-hand side than would be the case were the lines A² disposed radially to the center from which the curved lines or arcs A' are drawn, and, moreover, the spaces between the lines A² do not increase in height from left to right, as they would were radial lines employed. In the present case the lines A² are more nearly parallel, so far as the portions of them lying within the space between the outer and inner arcs A' are concerned, than would be lines radiating from the center from which the arcs A' are drawn.

B designates the indicating-arm pivoted at one end to the left side of the board, so as to sweep across the board and the tables produced thereon. The indicating-arm B is pivoted to the board at the center, from which the arcs A' are drawn, and its upper side is cut away at an angle from B to B' to form a straight edge B² at an angle to its longitudinal axis and adapted to approximately register with every line A². The indicating-arm is provided to the left of the table C with an antifriction-roller B³ of some kind to lift the arm from the board, so that it will not contact with and rub the table and will move easily and without noise. When the indicating-arm B is at its lowest point, the roller B³ will drop into a recess or depression *a* in the board and the lower edge of the arm will pass under a catch *a'*, secured to the board.

The columns of figures E E' at the right and left designate the number of days or hours to be calculated, and the indicator is provided with openings or notches *b*³ *b*⁴ at the ends of its straight edge to register with the corresponding numerals of said two columns. Of course there may be any number of columns and tables, according to the work to be performed.

The blank spaces on the board may have the directions for using the calculator printed thereon and other useful information. The rulings may be of different colors and the columns of the table C may be spaced apart by blank spaces to obviate the possibility of

error in taking off the amounts from the columns. The space F at the lower right-hand corner contains information as to what tables the board has on it. The spaces B' along the top edge of the indicator B are to receive the various salaries in duplicate of the top space A³ on the board.

The invention is intended to be used to calculate "salaries and wages" paid by the year, the month, the week, the day, and the hour. The month-board may be used for months of twenty-eight, twenty-nine, thirty, or thirty-one days or for a month of twenty-eight and twenty-nine or for months of thirty and thirty-one days combined, as shown on Sheet 2, the rulings for all boards to be the same and the desired amounts to be printed in figures thereon, as the case may require.

The above refers to all the boards in general, and the following will refer to each board by itself.

The board in Fig. 1 is especially adapted for the calculating salaries for months with thirty-one days. This board may be filled out with such salaries as the case may require, those shown being from ten to one hundred and twenty-five dollars per month, and the rate per day appears in the columns C.

In Fig. 2 the board is especially adapted for the calculating of salaries for months of thirty and thirty-one days combined. Thus the columns of tables must necessarily be double for the same salary in the body of the board, and also the various salaries must be shown in two spaces on the board instead of one. The indicator B is just the same in construction, but has two lines of spaces B' instead of one, the top line of spaces for the number of days in the month and the bottom line of spaces for the various salaries to be used. This board may be filled out with such salaries as the case may require. This board may be filled out for twenty-eight and twenty-nine day months also.

In Fig. 3 the board is especially adapted for calculating wages paid by the day. The indicating-arm must be ruled with four lines of spaces instead of two, as in the above. The top or first row of spaces on the indicator is for the various wages to be calculated, and the second row of spaces is for the amounts that equal three-fourths of one day at the same rate of wages paid per day. The third row of spaces is for the amounts that equal one-half of one day at the same rate of wages paid per day. The fourth row of spaces is for the amounts that equal one-fourth of one day at the same rate of wages paid per day. The fractional parts of days must be added by scratch memorandum or otherwise to the amount taken off the board for the full days. This board may be filled out with such wages as the case may require.

The board in Fig. 4 is especially adapted for calculating wages paid by the hour. The

indicating-arm in this case must be ruled same as in Fig. 3 and used in same way exactly; but the tables on the board with this sheet will be calculated by tens instead of units after ten has been reached. In this case two moves must be made for all calculations that end in the unit figure "1" to "9." Example: Sixty-seven hours at forty cents, draw the indicator down to "60," glance across to "40¢." and you find on the board "\$24.00," slide the indicator back up to "7," glance to "40¢." and you find "\$2.80." Thus sixty-seven hours at forty cents equals twenty-six dollars and eighty cents. This board may be filled out with such wages as the case may require.

The figures on the boards and indicators as presented in the drawings are only illustrations. Any figures within the scope of salaries and wages are intended to be used.

What I claim is—

1. The herein-described calculator comprising a board having vertically-disposed concentric curved lines or arcs and transversely-disposed lines intersecting said curved lines at an angle to the radius thereof and drawn from a center below the center from which the concentric curved lines or arcs are drawn, columns of tables arranged in the spaces formed by said lines, and an indicator pivoted at one end to the board at the center from which the concentric curved lines or arcs are drawn to swing over the tables and having its upper edge formed at an angle to register with every one of the said transversely-disposed lines.

2. The herein-described calculator comprising a board having vertically-disposed columns of tables arranged on concentric curved lines or arcs and the figures of each column arranged on lines radiating from a center below the center of the concentric curved lines or arcs at an angle to the radius of the curved or arc-like columns, and a pivoted indicator to sweep across the tables and having an inclined upper edge to register with all the transversely-disposed lines of figures.

3. The herein-described calculator comprising a board having vertically-disposed columns of tables arranged on concentric curved lines and the figures in each column arranged on lines at an angle to the radius of said curved columns, an indicator pivoted to the board eccentric to the axis of said curved columns, and having an inclined upper edge for the purpose described, an antifriction device on the indicator to one side of the tables, and a catch on the board to engage the indicator when not in use; the table having a recess to receive the antifriction device at such time.

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

ALEXANDER W. STEELE.

Witnesses:

S. H. HUDSON,

ROBT. S. CALDERWOOD.