

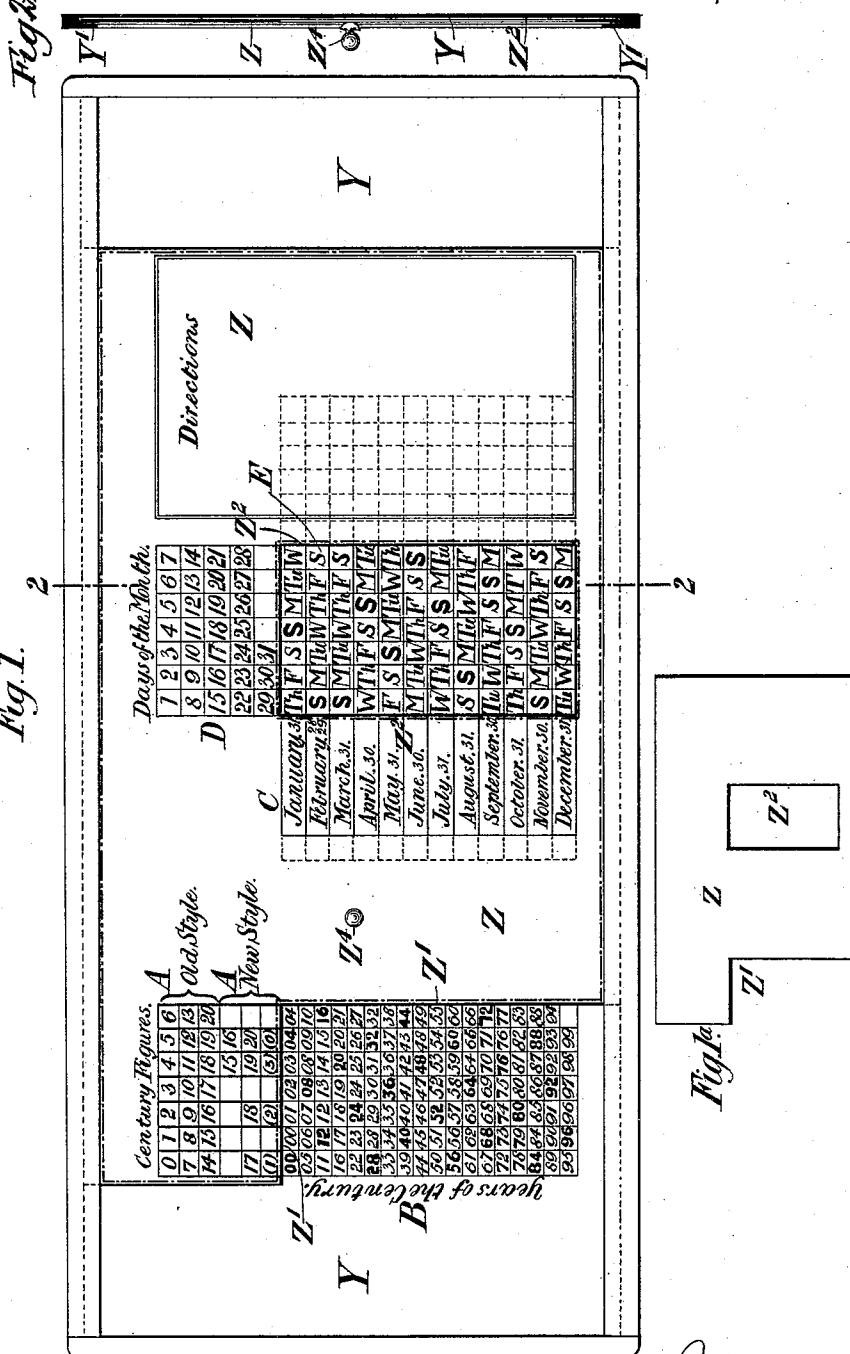
(No Model.)

4 Sheets—Sheet 1.

D. ROSS.
CALENDAR.

No. 465,294.

Patented Dec. 15, 1891.



(No Model.)

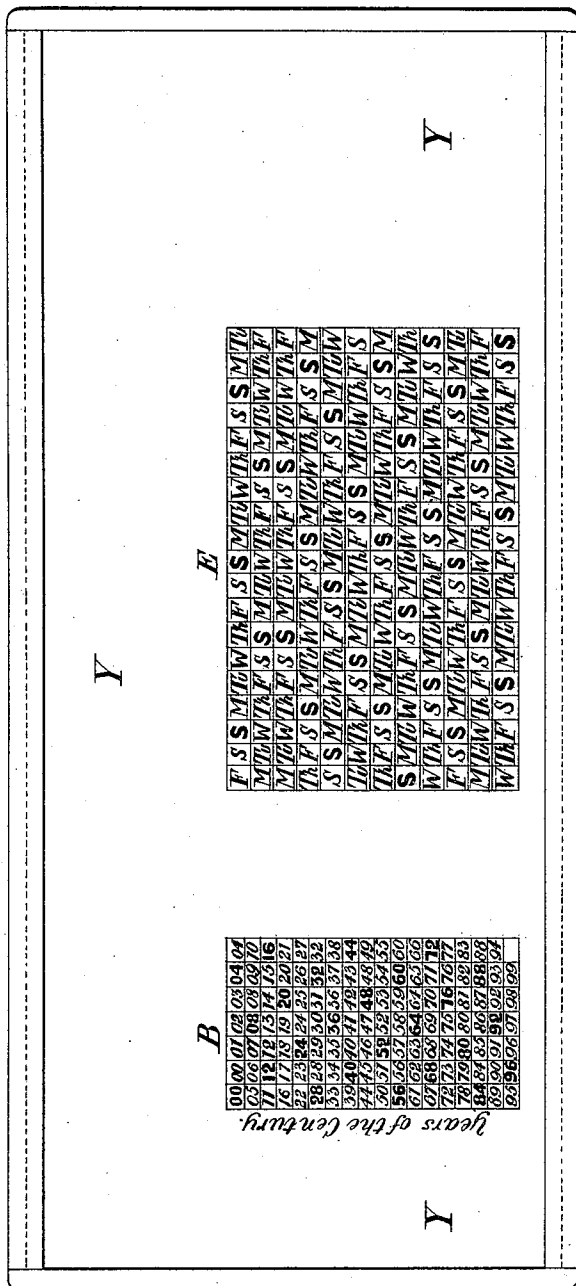
4 Sheets—Sheet 2.

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CALENDAR.

No. 465,294.

Patented Dec. 15, 1891.

Fig. 3.



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Inventor:
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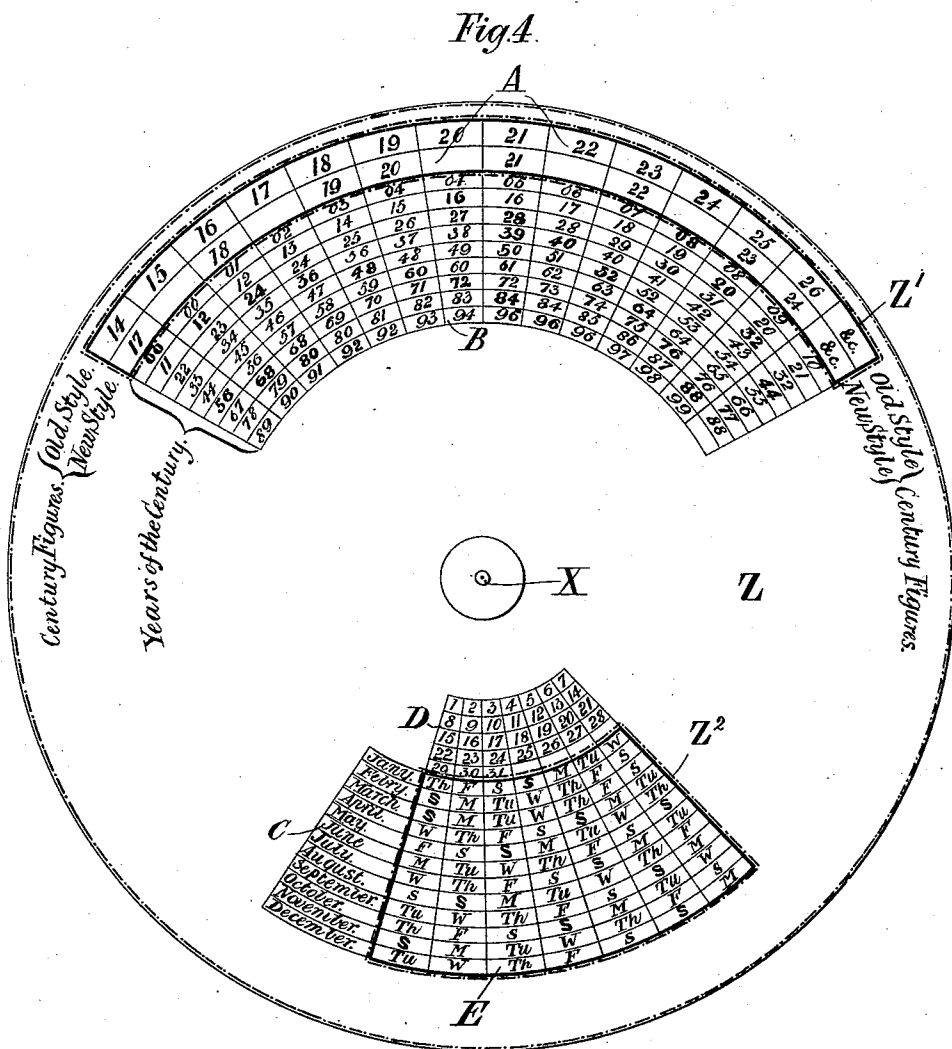
(No Model.)

4 Sheets—Sheet 3.

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CALENDAR.

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(No Model.)

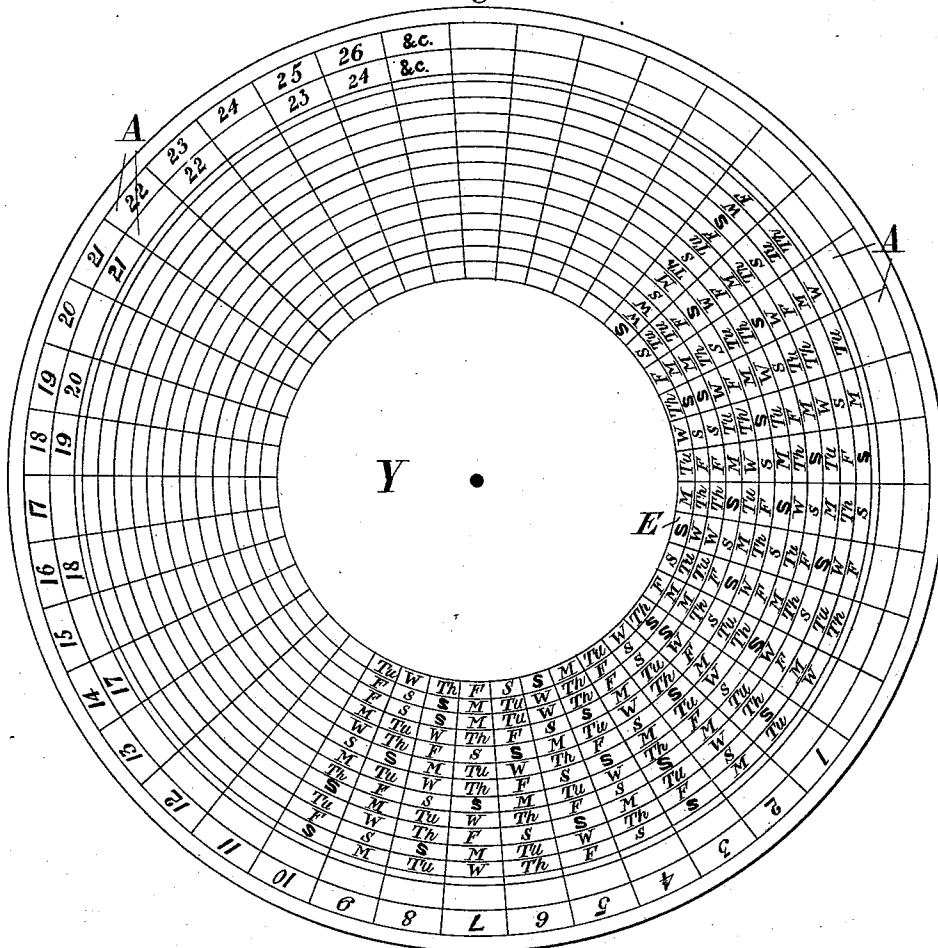
4 Sheets—Sheet 4.

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Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID ROSS, OF LONDON, ENGLAND.

CALENDAR.

SPECIFICATION forming part of Letters Patent No. 465,294, dated December 15, 1891.

Application filed October 16, 1891. Serial No. 408,893. (No model.)

To all whom it may concern:

Be it known that I, DAVID ROSS, a subject of the Queen of England, residing at London, in England, have invented certain new and useful Improvements in Calendars, of which the following is a specification.

The invention will be best understood by reference to the accompanying drawings, in which—

Figures 1, 1^a, 2, and 3 are views of one form of the calendar; Fig. 1 being a view of the complete calendar; Fig. 2 a section on line 2 2 of Fig. 1; Fig. 1^a a view on a reduced scale of one of the parts Z thereof, and Fig. 3 a view of the other part Y. Fig. 4 is a complete view; and Fig. 5 a view of one of the parts, with the table E only partially shown, of a modified form of the calendar.

Like letters indicate like parts throughout the drawings.

The invention embraces the combination of the following elements, viz: A, the figures 0 to 20 (or beyond) to denote the centuries from the first to the twenty-first or beyond; B, the figures 00 to 99 to denote the years of a century; C, the names of the twelve months; D, the figures 1 to 31 to denote the days of the month; and E, letters to denote the days of the week, the whole so arranged on, preferably, two pieces Y and Z of card-board or other suitable material, that, first, by bringing A and B into certain relations, as subsequently explained, the day of the week for any day of any year from 1 A. D. to 2099 A. D. (or beyond) may be seen at a glance; second, by one such adjustment for an ordinary year and two for a leap-year the calendar may be set for the whole year; third, New Style and Old Style dates may be shown with equal facility, this, as illustrated, being provided for by the two sets of figures A; fourth, no special adjustment is required for the exceptional fourth years 1700, 1800, 1900, 2100, &c., which are not leap-years in the New Style, the arrangement being such as to provide for this; fifth, while the calendar may be set for any year from 1 A. D. to 2099 A. D. (or beyond, if provided for in making the calendar) without any calculation whatever, it may be set with almost equal ease for any year from 2099 onward.

The arrangements by which these objects

are attained may be thus described. On the sheet Y, of card-board or other suitable material, which in Fig. 3 is shown apart from the sheet Z, the figures 00 to 99 are arranged in seven columns of eighteen lines, which I have designated, collectively, "B;" but any convenient multiple of 7 may be used, the number of lines being varied accordingly. These columns and all subsequently mentioned are of uniform width. The numbers divisible by 4 without a remainder are repeated. Thus the first line may run 00 00 01 02 03 04 04, the second 05 06 07 08 08 09 10, the sixth 28 28 29 30 31 32 32, and so on. These numbers 00 to 99 denote the years of the centuries. On the same sheet Y, at a convenient distance and designated, collectively, E, are represented the days of the week arranged in nineteen columns of twelve lines to suit the arrangement of B, above described. (It will be understood that if the number of columns in B be increased the number of columns in E must be correspondingly increased.) In each line the days follow in their natural order, and the first day of each successive line corresponds to the first day of each successive month of an ordinary year which begins with the first day of the first line. In the table E the first line and column are shown commencing with Friday, so as to make the table correspond with the figures on tables A and B, any one of which tables being altered the other table should be altered to correspond. Consequently any one column represents in succession the same days of the successive months of an ordinary year. For example, if the first day in a column of table E represents the day of the week for the 4th, 11th, 18th, and 25th of January, the second represents that for the 4th, 11th, 18th, and 25th of February, and so on. The next column to the right represents the 5th, 12th, 19th, and 26th of the months, and so on. On the other sheet Z, of card-board or other suitable material, the figures 0 to 20 are arranged in seven columns, here designated collectively A. (Any convenient multiple of 7 may be used, table E being correspondingly extended.) In the first line are the figures 0 to 6; in the second, 7 to 13; in the third, 14 to 20. These represent the centuries in the Old Style. In the fourth line

the figures 15 and 16 are placed in the fifth and sixth columns, respectively. In the fifth line 17, 18, 19, and 20 are placed in the first, third, fifth, and sixth columns, respectively. These two lines represent the centuries in the New Style. (In both Old and New Styles the series may be continued indefinitely.) Below these columns the sheet Z is cut away at Z'. To the right of A the numbers 1 to 31 are arranged at D in seven columns; 1 to 7 in the first line, 8 to 14 in the second, and so on. These denote the days of the month. The sheet Z is cut away below these columns at Z² to an extent in one direction sufficient to expose the twelve lines of the columns E, and in the other direction sufficient to expose seven columns, or one week, of E on the sheet Y. On the left of the opening thus made are given the names of the twelve months C in downward succession, corresponding to the twelve lines of E. (As an alternative arrangement the months which begin on the same day of the week may be grouped together, thus: January and October, February, March and November, April and July, and so on. In this case the names would occupy seven lines; and table E would be reduced to the same number.) The columns at D must be so placed in relation to those at A that when the Z sheet is superimposed on Y, with the bottom of the last column of A exactly over the top of the first column of B, the first column of D shall be similarly placed in relation to the first column of E, and when the first column of A is over the last of B the last column of D shall be over the last of E. Provided this condition be fulfilled, A may be placed in any convenient relation to D, and B correspondingly placed in relation to E, and conversely.

A convenient way of constructing the calendar shown in Fig. 1, so that the part Z may be adjusted on Y, is to form Y with guides or grooves Y', in which the edges of Z slide, and provide a knob Z⁴, or equivalent, on Z, so that it may be grasped when required for moving Z along. This construction is clearly shown in Figs. 1 and 2. As shown in Figs. 4 and 5, a circular arrangement may also be adopted with suitable modifications, the columns being replaced by equal spaces radiating from the centers of the two disks Y Z, and the lines by concentric spaces, the respective sheets and tables being indicated by the same reference-letters as in the former figures. In this form table A may conveniently be arranged in two lines, as shown, and table B in nine lines, while table E may be made completely circular. In this example the upper sheet Z carries the table B and is cut away at Z' to expose the table A, which in said example is on the sheet Y. Finally, the two sheets are so connected by a pivot X that Z may slide or turn over Y. The calendar is now ready for use. In Figs. 1 and 4 the sheets Z are outlined with dot-and-dash lines, so as

to render them more easily distinguishable from Y.

Directions for use.—To set for any ordinary year from 1 A. D. to 2099 A. D., slide or turn Z upon Y until the column of A containing the century figure (or figures) is over that of B, containing the year of the century.. For example, set the century figures, say 18, (new or Old Style, as may be desired,) over the column of B containing the year figures, say 91. The calendar is then set for 1891, as shown in Figs. 1 and 4, for New Style. It will be observed that underneath the seven columns D of the days of the month are exposed seven of the columns E of the days of the week, with the names of the months to the left at C. The days of the month are represented by the days of the week in the corresponding columns of E opposite the names of the respective months. (Note that the century figure for the years 1 A. D. to 99 A. D. is 0, so that for the year 1 the calendar is set for 001, and so on.)

To set for leap-years, the year figures for leap-years are repeated. Set the century figures to the first pair for January and February and to the second pair for the rest of the year.

To set for any year beyond 2099 or any later date provided for in making:

I. *New Style.*—Divide the century figures of the given year by 4, and according as the remainder is 1, 2, 3, or 0, set as for 17, 18, 19, or 20, respectively. For example, for 4193 divide 41 by 4. The remainder is, 1 therefore set for 1793.

II. *Old Style.*—Divide the century figures of the given year by 7, and use the remainder as the century figure. For example, for 4193 divide 41 by 7. The remainder is 6, therefore set for 693.

The above description as to shape, color, details of arrangement, &c., may be departed from so long as the following essential conditions are maintained. The mutual relations of A, B, C, D, and E must be such that for an ordinary year by bringing the figure or figures of A, denoting the century, into a given relation with the figures of B, denoting the year of the century, then the names of the months C, and the figures of D, denoting the days of the month, shall be thereby brought into such a relation with the letters of E, denoting the days of the week, as to constitute the calendar for that year, while for a leap-year—for which two pairs of year figures are given—the calendar is set for January and February by bringing the century figure or figures of A into similar relation with the first pair of year figures of B, and for the rest of the year—that is to say, for the remaining ten months—by corresponding adjustment to the second pair of year figures.

Any convenient arrangement of the aforesaid relations may be adopted provided this condition is fulfilled, and the adjusting or

setting movement may accordingly be horizontal, vertical, or circular.

Leap-years may also be provided for by having the days of the week at E to correspond with January and February on a slip of some suitable material, which can be moved the width of one column in relation to the rest of E. The century figures will then be set to the second pair of year figures, (the first being omitted) thus—

..	00	01	02	03	..	04
05	06	07	..	08	09	10
11	..	12	13	14	15	..

&c., the slip moved, so as to expose one day earlier in the week than it otherwise would for both months—viz., January and February, and the calendar is then set up for the whole year. For ordinary years the slip would be returned and remain in its normal position.

I claim—

1. The herein-described calendar, comprising a series of numbers indicating centuries and arranged in columns, as described, a series of numbers indicating years of the century and arranged in columns below the columns of century numbers, a series of numbers indicating days of the month arranged in columns, a series of letters indicating days of the week arranged in columns below the columns of the days of the month, and the names of the months arranged in a single column opposite the letters indicating the days of the week, the series of numbers indicating centuries, and the days of the month adapted to occupy various positions relatively to the columns of numbers indicating the century years, and the columns of letters indicating the days of the week, for the purpose specified.

2. The herein-described calendar, comprising a series of numbers indicating centuries according to the Old Style and arranged in columns, a series of numbers indicating centuries according to the New Style arranged in columns below the columns of the other century numbers, a series of numbers indicating years of the century arranged in columns below the columns of century numbers, according to the New Style, a series of numbers indicating days of the month arranged in columns, a series of letters indicating days of the week arranged in columns below the columns of the days of the month, and the names of the months arranged in a column opposite the letters indicating the days of the week, the series of numbers indicating centuries according to both styles and the days of the month adapted to occupy various positions relatively to the numbers indicating the century years and the letters indicating days of the week, as and for the purpose specified.

3. In a calendar, the combination, with a base or support provided with guideways at opposite edges and bearing a series of num-

bers indicating years of the century and letters indicating days of the week, of a superposed sheet provided with a knob or handle and adapted to slide in the said guideways, and provided with a series of numbers indicating centuries, a series of numbers indicating days of the month, and the names of the months also arranged in a series, the numbers indicating centuries and days of the month adapted to occupy various positions relatively to the numbers indicating century years and the letters indicating the days of the week when the said superposed sheet is adjusted, as described, for the purpose specified.

4. In a calendar, the combination, with a base or support provided with a series of numbers indicating years of the century and letters indicating days of the week, both series being arranged in columns, as described, of a superposed adjustable sheet provided with series of numbers indicating centuries, the days of the month, and also with the names of the month all arranged in columns, as described, the century numbers occupying a position above the century-year numbers, the numbers indicating the days of the month above the letters indicating the days of the week, and the names of the months at one side of the latter, said superposed sheet being adapted to be adjusted to vary the positions of the century numbers and the numbers indicating the days of the month relatively to the century-year numbers and the letters indicating the days of the week, as described, for the purpose specified.

5. The herein-described calendar, comprising a base or support, a series of numbers indicating years of the century arranged in columns upon said base, and a series of letters indicating days of the week also arranged in columns upon said base, a superposed sheet provided with cut-away portions above the century-year numbers and the letters indicating days of the week to expose the same, a series of numbers indicating centuries arranged in columns upon said sheet and above the century-year numbers, a series of numbers indicating days of the month also arranged in columns upon said sheet above the letters indicating days of the week, and the days of the month arranged in a column upon the sheet opposite the said letters, said superposed sheet being adapted to be adjusted to vary the positions of numbers indicating the centuries and days of the month relatively to the years of the century and the days of the week, as and for the purpose specified.

In testimony whereof I have hereto set my hand in the presence of two subscribing witnesses.

DAVID ROSS.

Witnesses:

HARRY B. BRIDGE,
CHAS E. ROSE.