

No. 658,028.

Patented Sept. 18, 1900.

A. W. STEIGER.
CALENDAR.

(Application filed Jan. 24, 1900.)

(No Model.)

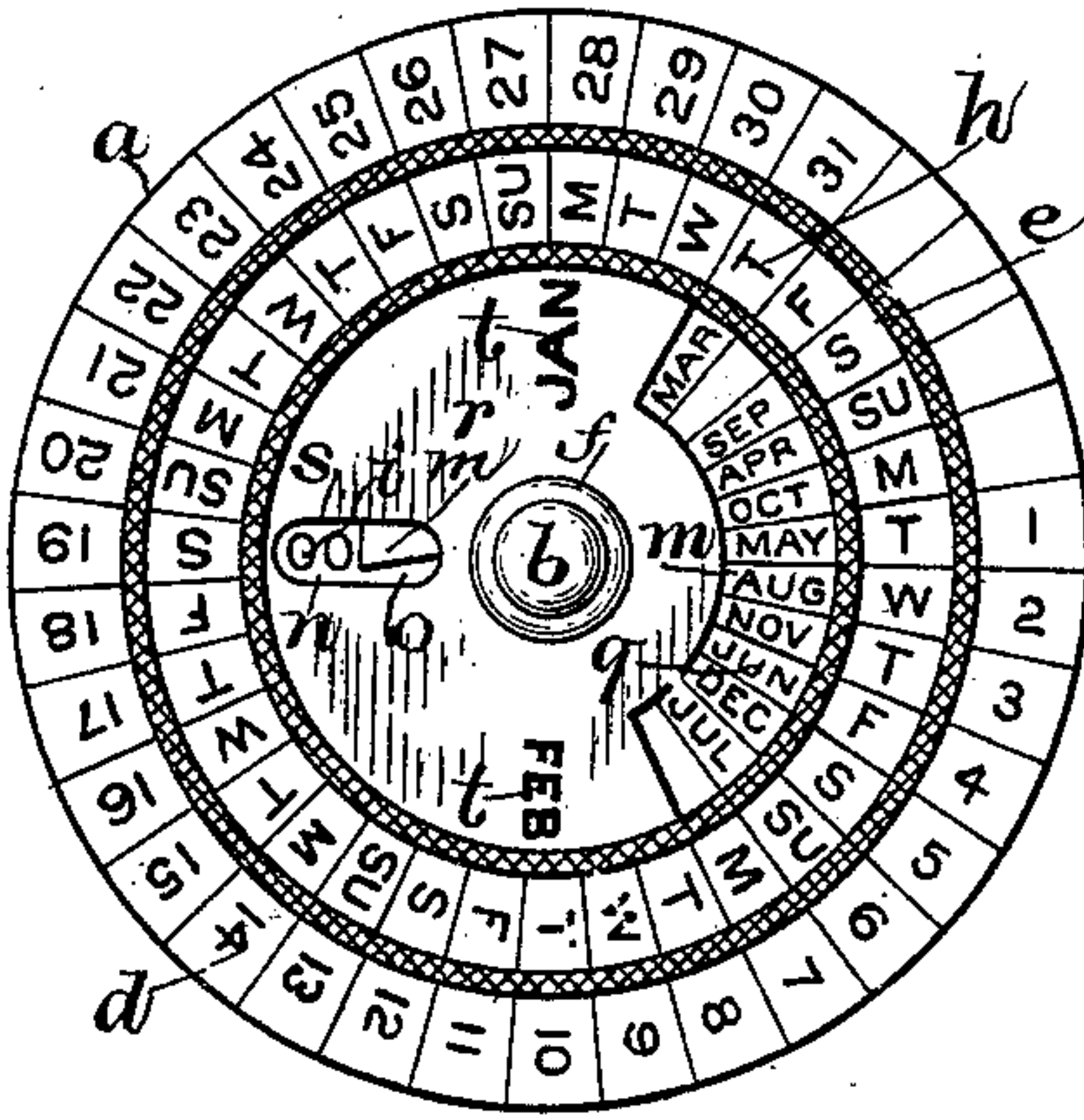


FIG. 1.

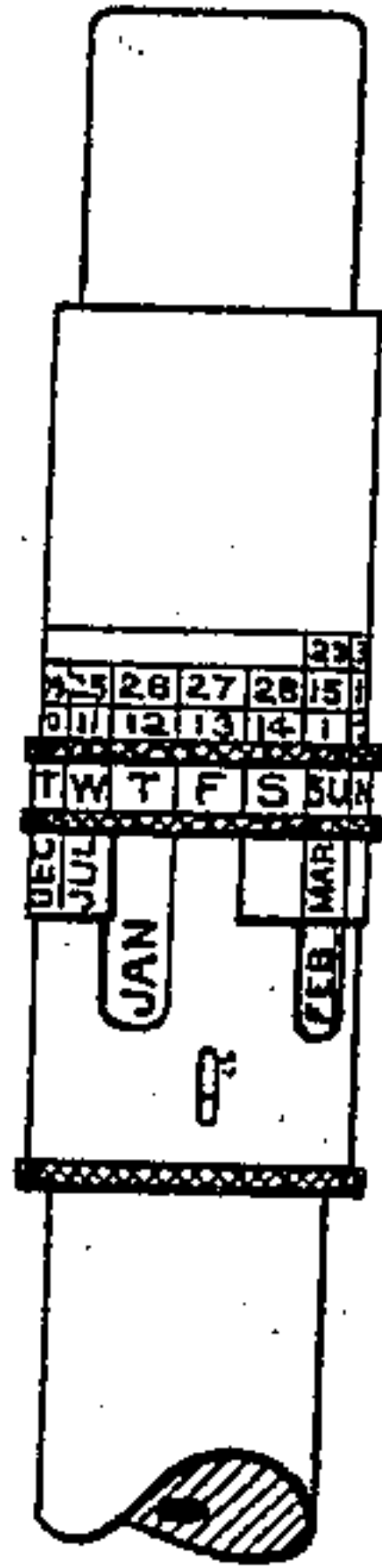


FIG. 2.

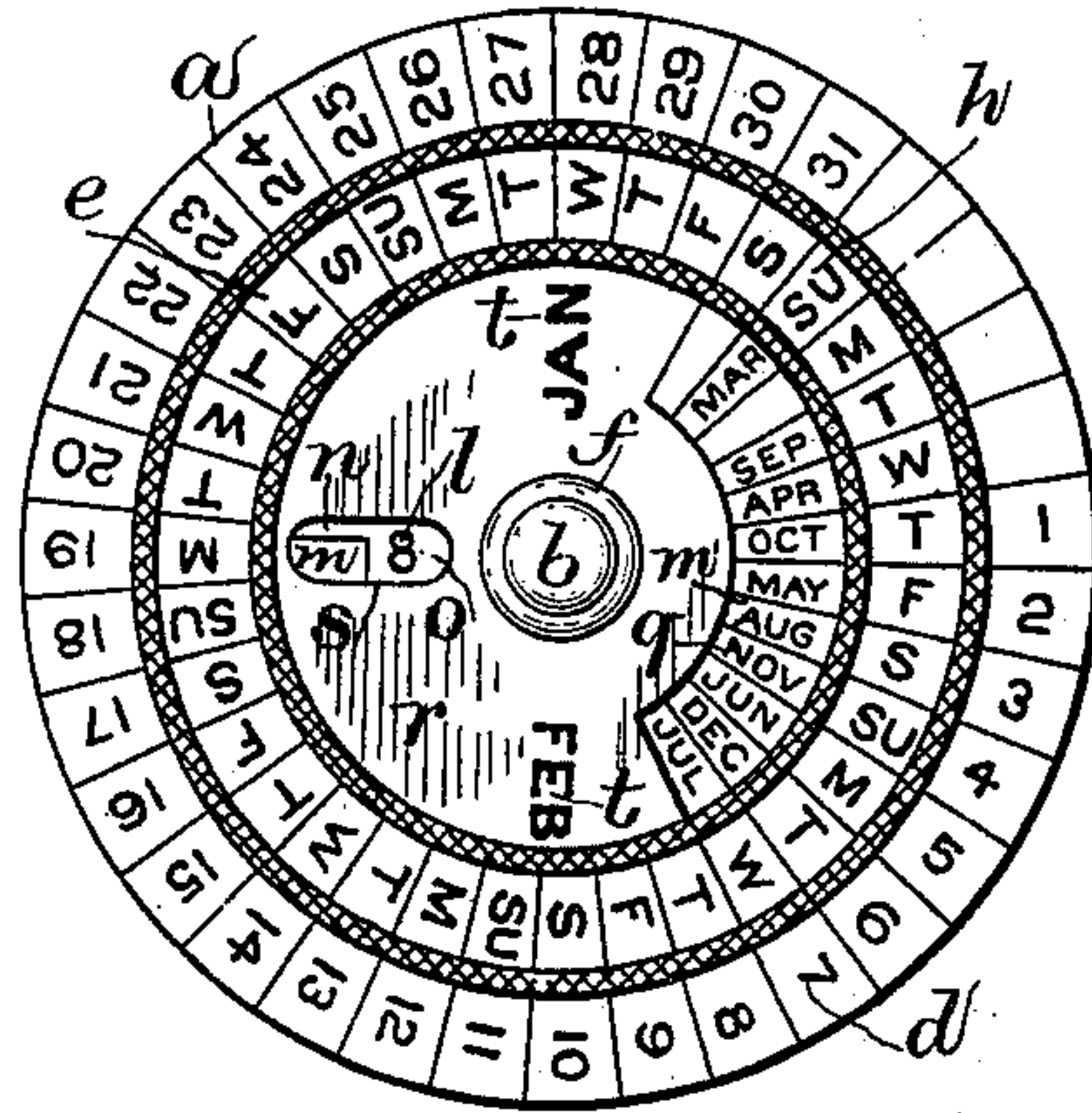


FIG. 3.

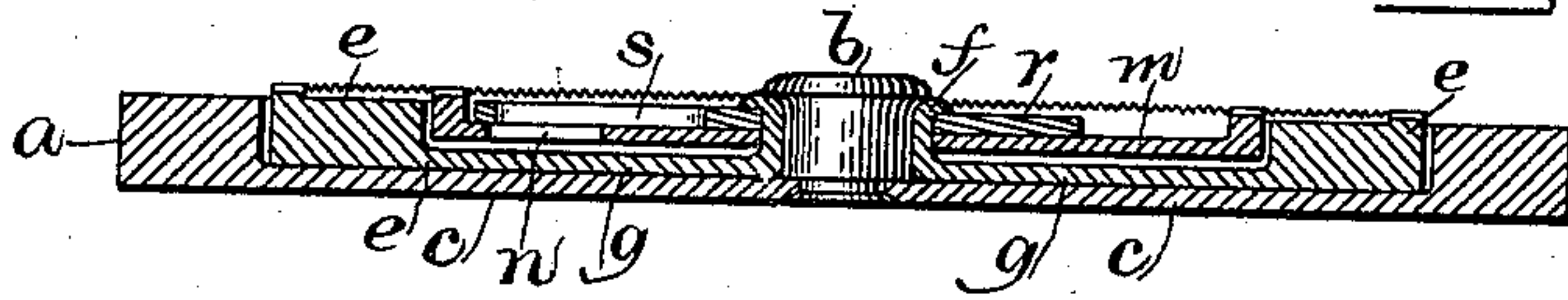


FIG. 4.

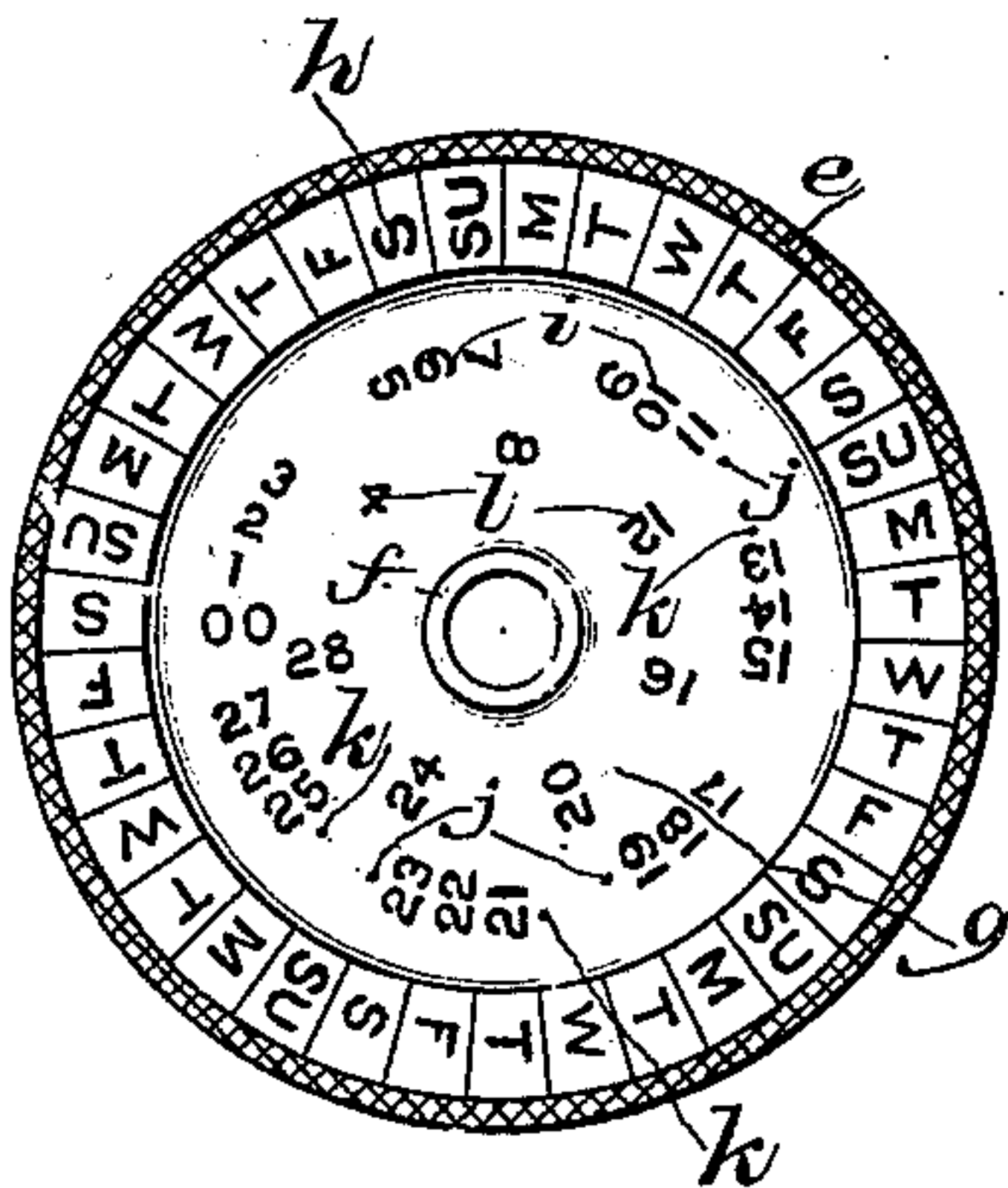


FIG. 5.

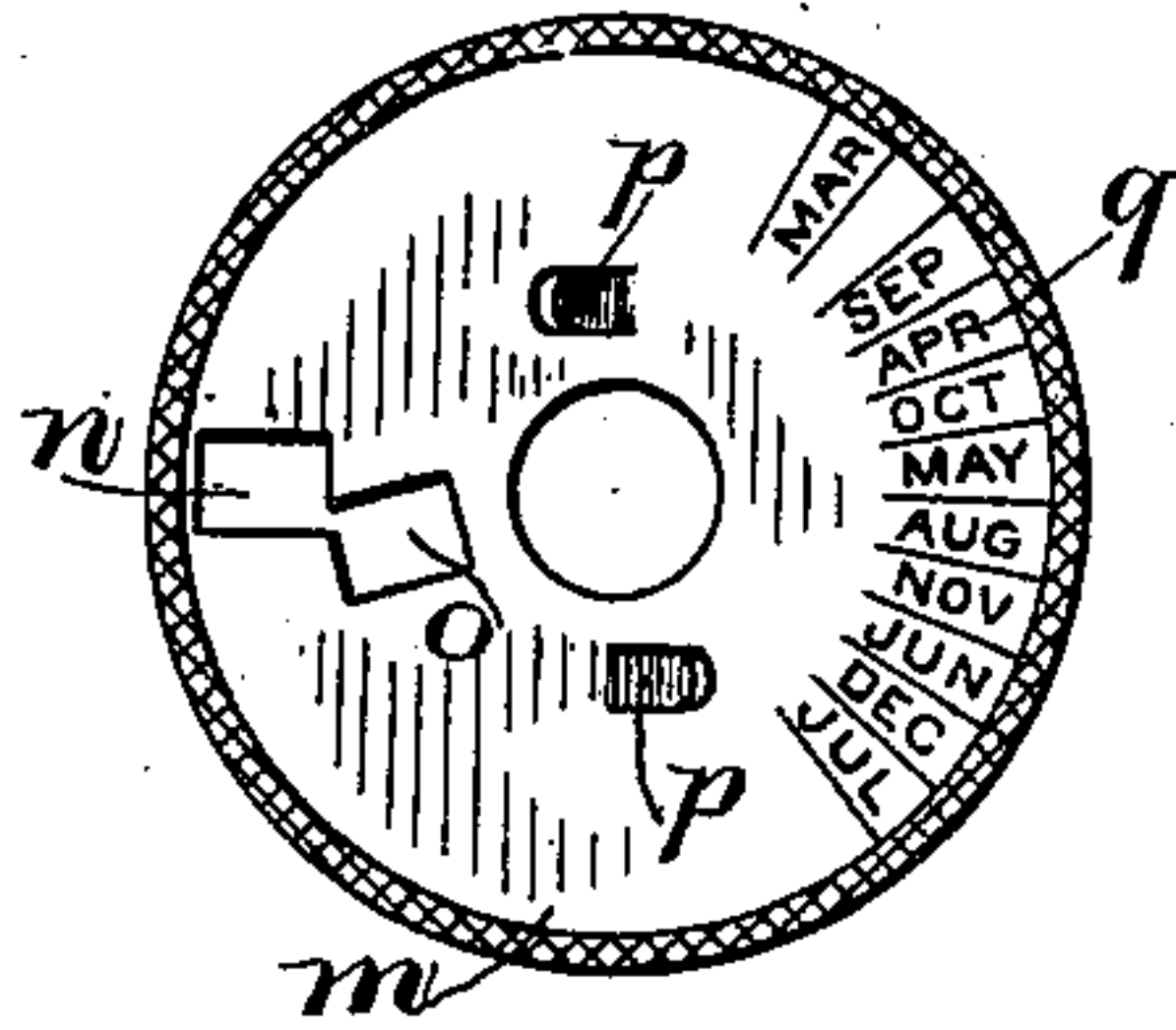


FIG. 6.

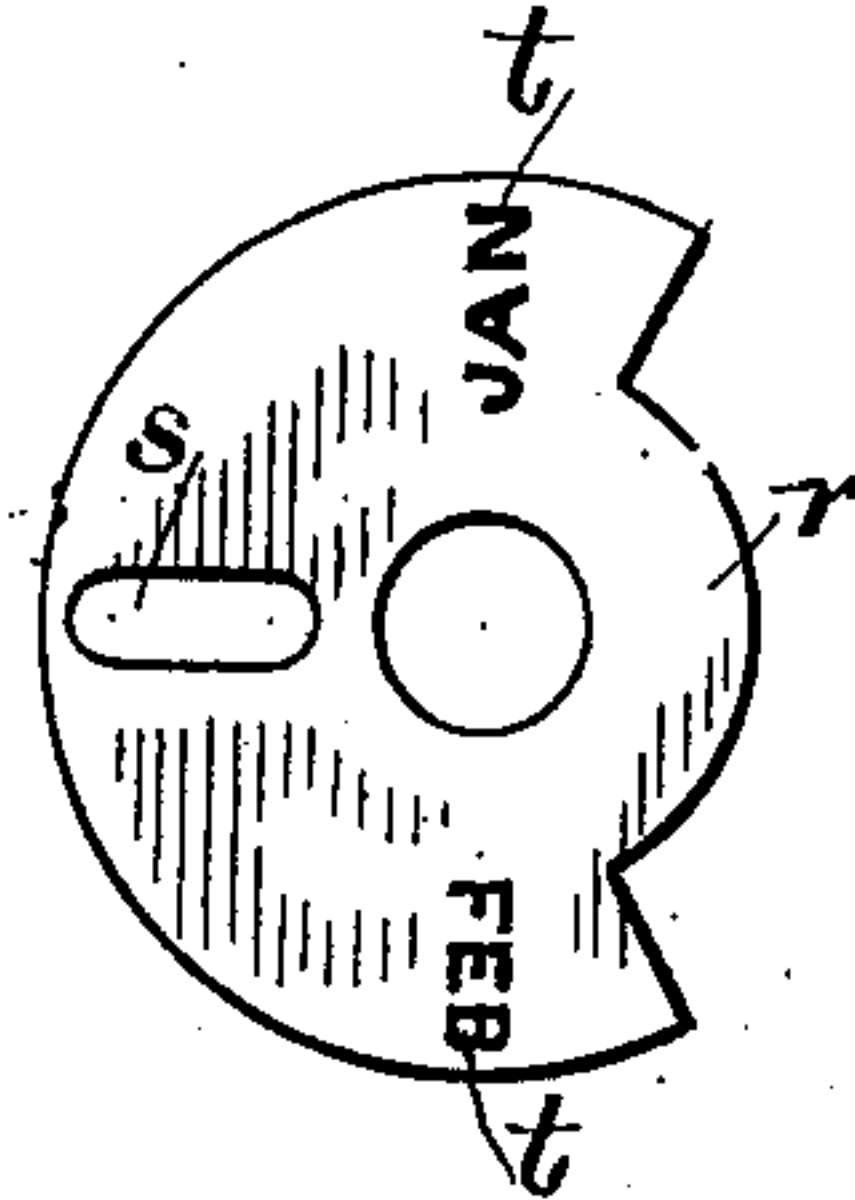


FIG. 7.

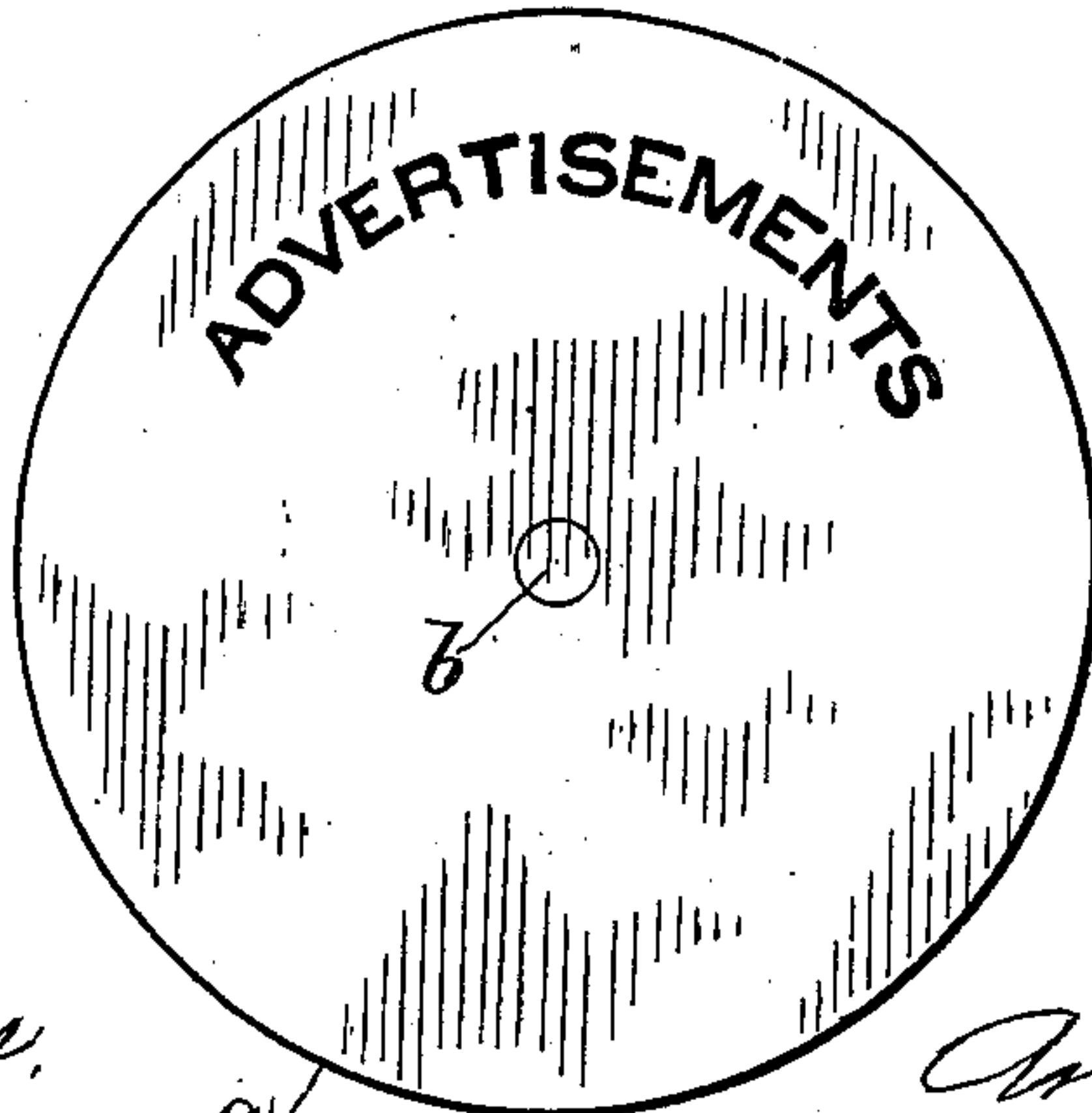


FIG. 8.

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UNITED STATES PATENT OFFICE.

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CALENDAR.

SPECIFICATION forming part of Letters Patent No. 658,028, dated September 18, 1900.

Application filed January 24, 1900. Serial No. 2,673. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. STEIGER, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Calendars, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention in calendars relates to devices intended to show, when the parts are suitably adjusted, the day of the week and month for a given year of a series. Many of the constructions for this purpose (commonly made of paper, cardboard, celluloid, &c.) are unwieldy, cumbersome, or fragile; but I have devised a calendar that may be carried in one's pocket without inconvenience, is substantially made of metal, and may be quickly adjusted to find the required date.

The invention consists in the arrangement of dials of years in relation to the dials of week-days, so that in connection with months-dials adjustable for ordinary and leap years and devices for positioning the same for a particular year the day of the week may be determined for any month of the series of years included by the years-dial.

The invention further consists in details of construction that adapt the device to convenient use and render the same compact and unobtrusive.

The calendar is so constructed that a series of concentric dials may be made to register with any portion of each other, except the dials for years and days of the week, which are permanently arranged with relation to each other by mechanically uniting the said dials and the dial of the two months of the year that shift to a limited degree with regard to the dial of the other months of the year because of the interpolated days for the leap-years. The dial showing days of the month is divided into thirty-five spaces, which are occupied by consecutive numerals up to the thirty-first space, the remainder being vacant for a purpose that will be explained. A dial having thirty-five spaces is supported concentrically with the dial above alluded to, and the days of the week are arranged in order in the spaces and then repeated five times to complete the dial. On the same piece carrying the week-days dial or perma-

nently united thereto are dials, conveniently also of thirty-five spaces, showing a series of years. One dial for ordinary years is arranged in order three years then skipping two spaces, and repeating this arrangement till the dial is complete. If the interval of years should include a fourth year not a leap-year, there would be one group of four years between two vacant spaces. The other dial, which displays the leap-years, is stamped on the same piece as the dial for ordinary years, and its numerals are positioned opposite the first of the vacant spaces of the dial for ordinary years. These years-dials are arranged in such order to the week-days dial that they form a member of the selecting devices for determining what may be the week-day of the desired date. The leap-years are separated from the ordinary years, as above described, merely for convenience, as it is thought that the adjustment of the several parts may be more quickly perfected. However, I do not always separate the years and will describe an arrangement having all the years on the same dial. The support for another concentric dial is furnished with a hole or other indicating device registering with the dial of ordinary years and one space of the week-days dial backward from this hole, a like indicating device registering with the dial of leap-years, both being of just sufficient width to expose but a single year of either dial. This dial-support is furnished with a frictional device to prevent displacement of the parts connected with it, and the same may consist of tongues stamped from the support and bent out of its plane. A segmental dial of all the months but January and February is arranged in such relation to the holes in the support that when a year is exposed by one of the holes this dial becomes a member of a selecting device to show the order of week-days for these months of that year. Last of all is supported a concentric auxiliary dial having a slot long enough to register with either of the holes above described in the principal months-of-the-year dial, and this dial is furnished with the marks "January" and "February," placed in such relation to the slot that when the slot exposes a year through the second hole in the contiguous dial it becomes part of the selecting devices for

the week-days of these months. The arrangement of the two months-dials with relation to the locating holes and slot is determined for a known year, so as to show against the days-of-the-week dial the proper week-day for the first day of each month. Now for the succeeding years. As the ordinary year numbers on the support of the week-days dial are arranged to cause an advance of one week-day for each year; the week-day for the first day of each month will be opposite the month mark on one of the two dials when the hole in the month-dial exposes such year. In a leap-year January and February advance, as usual, one week-day; but the other months advance two days, due to the added day in February. In order to follow this change, it becomes necessary to change the relation of the two months-of-the-year dials, and for this purpose to find the week-day of a month in a leap-year the slot in the auxiliary months-dial is made to register with the second hole in the principal months-dial, and as this hole is one day's space back from normal the effect is to move January and February backward one day with relation to the following months, and thus add a day to February. As the number on the leap-years dial is one space in advance of the last year on the ordinary-years dial when the slot and hole expose the leap-year number on the dial, the arrangement of the parts is such as to furnish a selecting device for the week-days of the first days of the month for all the months of the leap-year. In the year succeeding leap-year the week-days for all the days of the months excepting January and February should advance one day, and this is accomplished by leaving a space in the ordinary-years dial, so the hole for ordinary years, which, it will be remembered, is one day's space in advance of the hole for leap-years, may when advanced a day's space from the leap-year position uncover the required year; but it will be also remembered that the auxiliary months-dial has been set back a day for the leap-year, and to reform the month-dials for the whole of an ordinary year it becomes necessary to move this dial carrying January and February an extra day forward. This is accomplished by causing the slot of the auxiliary dial to register with the first hole of the months-of-the-year disk, and when both expose the number of the ordinary year the two dials show against the week-days dial the first day of the month for all the months of that year. To make a calendar for the whole of any month, any of the five like days on the days-of-the-week dial is moved in line with the proper numeral on the days of the months dial when against any day of the month the corresponding day of the week appears. The extra spaces on the days-of-the-month dial are inserted so the spaces of the whole dial may register with the days-of-the-week dial, which contains five full weeks. The dial of years might be ar-

ranged with the numbers all in the same circle, a space before the leap-years and only a single hole in the principal months-dial support; but the auxiliary-months-dial support would have a slot with its rear extremity showing the hole of the principal months-dial support ordinarily and extended one day's space ahead, so that for a leap-year the auxiliary-dial support could be set back to include an extra day.

To illustrate a good embodiment of the invention, I show, much enlarged, in Figure 1 a plan of a pocket-calendar set for an ordinary year; Fig. 2, a plan of the calendar set for a leap-year; Fig. 3, a central section of the calendar as shown in Fig. 1; Fig. 4, a plan of the dial for week-days and the dials for years; Fig. 5, a plan of the principal months-dial; Fig. 6, a plan of the auxiliary months-dial; Fig. 7, an inverted plan showing the advertising-surface of the calendar, and Fig. 8, the dials marked on the faces of cylinders instead of the faces of disks.

A peripheral ring *a* and central stud *b* are connected together by a thin web *c* to form an unobstructed back that may be utilized for advertisements. The face of the ring is divided into a dial *d* of thirty-five spaces, and numerals representing the days of the months are arranged consecutively in the spaces, so as to leave vacant spaces between the first and last of the numbers. A plate *e* is inserted in the cavity between the ring *a* and stud *b*, having an annular surface set flush with the face of the ring and pivoted on the stud by means of a sleeve *f*, formed on the plate, the portion of the plate *g* between the annulus and the sleeve being depressed, so that it rests on the web of the outside ring. The face of the annulus of the plate is divided into a dial *h* of thirty-five spaces, and the days of the week are marked thereon in order and repeated five times, so all the spaces are occupied. I mark upon the sunken portion *g* of the plate the series of years, arranged, preferably, in two dials, the outer one *i* showing ordinary years in order, leaving spaces *j* for the leap-year numbers and other spaces *k* for restoring the normal order of days, the inner one *l* showing the leap-years radially under the spaces *j* in the dial of ordinary years. The years are arranged in such order to the dial of days of the week that they form a member of the selecting devices for determining what may be the week-day of the desired date. Upon the sleeve of the plate is pivoted a disk *m*, having a hole *n*, registering with the dial of ordinary years, and one space backward of the week-days dial a hole *o*, registering with the dial of leap-years, both of just sufficient width to expose but a single year of either dial. This disk is furnished with a frictional device to prevent displacement of the parts connected with it, and the same may consist of tongues *p*, stamped from and bent out of the plane of the disk. A segmental dial *q* of all the

months but January and February is arranged in such relation to the holes *n* and *o* that when a year is exposed by one of the holes this dial becomes a member of the selecting devices to show the order of the week-days for these months of the year. Also pivoted on the sleeve of the plate is a segment *r*, having a radial slot *s* long enough to register with either of the holes *n* or *o* in the disk and provided with a dial *t* for the months January and February, arranged in such relation to the slot *s* that when the slot exposes a year through the hole in the disk *m* the dial becomes part of a selecting device for the week-days for these months. The tongues *p* cause sufficient friction between the plate *e*, disk *m*, and segment *r*, which are secured together by the headed sleeve *f*, to preserve their adjustment when they are moved with relation to the ring *a*.

The ring *a* and plate *e* may be formed from sheet metal instead of being made with solid rims, if precious metals are used. The several parts of the calendar are provided with knurled edges for convenient manipulation.

If it were desired to determine on what week-days the first days of the months of 1900 will fall, the slot *s* and hole *n* are caused to register with the year indication "00" of the dial *i*, and opposite each month-mark of the dial *q* and dial *t* will appear on the dial *h* the week-day of the first of each month. If the week-day of the sixteenth day of May were desired, as from inspection of Fig. 1 it appears that May comes in on Tuesday a calendar for the entire month of May would be formed by turning the dial *d* till the numeral "1" comes opposite one of the five Tuesday-marks on the dial *h* and it is found that May 16 falls on Wednesday. As the dials *d* and *h* each contain thirty-five spaces, the dial *d* will register with a given week-day in five positions of the dial *d*, which is a convenience in adjusting the dials for a full month. The arrangement of the dial *h* is also convenient for finding the first days of the months for the period including the years 1900 and 1928, as the number of year designations is twenty-nine and there are six spaces at the leap-years for added days col-

lectively on the dials *i* and *l*, so that opposite each day of the dial *h* some year or space is located of the dials *i* and *l*, the total number of spaces in the two year-dials or the week-day dial being thirty-five. If the first days of the months of a leap-year, as 1908, are to be found, the slot *s* and hole *o* are made to register with the indication "8" of the dial *l* and the week-day of the first of each month will appear on the dial *h* opposite the appropriate month-mark on the dials *q* and *t*. To form a calendar for the month of October, the first numeral of the dial *d* is made to register with any Thursday of the dial *h*, as illustrated in Fig. 2.

A convenient adaptation of the calendar to a lead-pencil is illustrated in Fig. 8, the several dials being marked on the cylindrical surfaces of the cap carrying the rubber; but as there is not space enough in the circumference of the cap for a full month of numbers the month-numerals are arranged in groups of fourteen, and instead of repeating the week-days five times they occur only twice.

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

In a calendar, concentric dials for indicating months of the year, combined with a concentric dial showing the days of the week permanently connected with two concentric dials, one showing ordinary years and the other leap-years arranged in proper relation to the said week-days dial; the principal months-dial having two selecting-holes one day's space apart, each registering with one of the years-dials, and the auxiliary months-dial having a selecting-slot that may register with either hole of the principal months-dial, so that if the slot and a hole exhibit a year, the several dials display the first week-days for all the months of that year, substantially as described.

In testimony whereof I have hereunto subscribed my name this 22d day of January, A. D. 1900.

ANDREW W. STEIGER.

Witnesses:

BEATRICE M. WETMORE,
C. F. HOWE.