# Comparison of Perpetual Calendars

An extensive variety of perpetual calendars have been patented and manufactured for sale. This document compares my tent desk calendar, which I consider to be a practical perpetual calendar, to some of the more typical and interesting ones that I have found. In the descriptions below, my tent calendar follows the others. All of the calendars in this document are passive in that they do not require any power to operate. Considering how simple my calendar is, I am surprised that I have not found anything quite like mine. Perpetual calendars can be divided into two types as follows:

1. Display calendars that display the day of the month, and may also display the month and/or the day of the week. These calendars require reference to a conventional calendar to set.
2. Standalone calendars that can determine what day of the week a particular date falls on.

The easiest way to find examples of both types is to search for "perpetual calendar" on https://www.google.com/ or https://www.bing.com/ , and then select "Images". Perpetual calendars for sale can be found by searching on https://www.etsy.com/ and https://www.alibaba.com/ .

Display Calendars

The majority of perpetual calendars are the display type. The tile calendar has been made for a long time. It has 31 tiles that are arranged every month to display the days of the month in the same format as a conventional calendar. Some also have tiles to indicate the month. There are many variations available, and some are quite artistic. Most, if not all, are made for mounting on the wall.
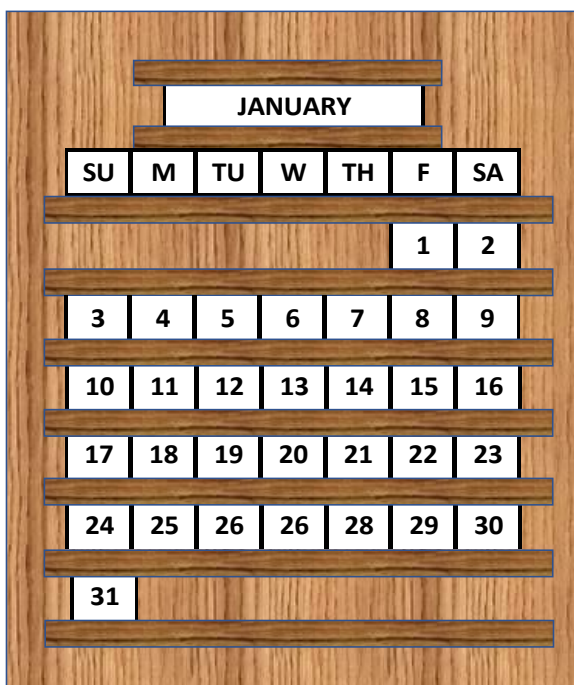

Tile Calendar, Slider Calendar and Block or Cube Calendar

Both the slider calendar and the block or cube calendar are for use on a desk. In a slider calendar, the window displays seven columns of a 13-column table of the days of the month. The table is the same as the one on the top part of my slider. In the above illustration, the window moves rather than the table. Many years before I began developing a standalone calendar, I thought of this concept and considered it novel. I later learned that others had discovered it long before me. I gave considerable thought, without success, to an easy way of covering 29, 30 and 31 when they do not apply. Now that I have a simple-to-make standalone calendar with a range of 100 years, I do not consider covering these numbers to be important.

The block or cube calendar has to be set every day. There are many variations. Some only display the day of the month. Rectangular pieces, rather than cubes, are often used for the day of the week and the month.
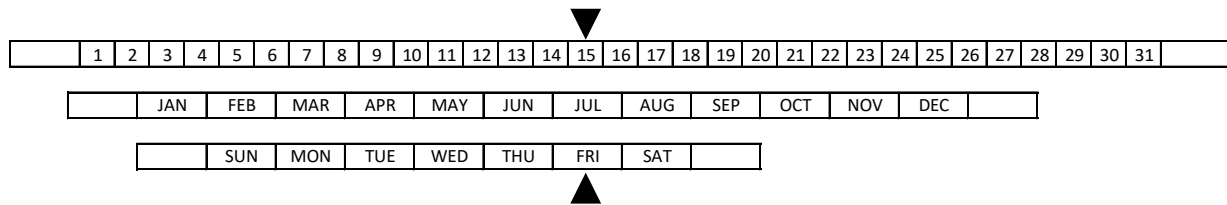
Push and Pull Calendar

The push and pull calendar has three horizontal bars to display the day of the month, the month, and the day of the week. The top bar has the numbers 1 to 31, the middle bar the months January to December, and the bottom bar the days Sunday to Saturday. The bars are pushed and pulled to display the day of the month, the month, and the day of the week in three windows. A variation of this design has three rings instead of three bars. I have seen one where the outer ring, which has the numbers 1 to 31, is over a foot in diameter. Both the bar and the ring versions seem to be popular, judging by the number for sale on https://www.etsy.com/. These calendars are for wall mounting.

Front View   Side View
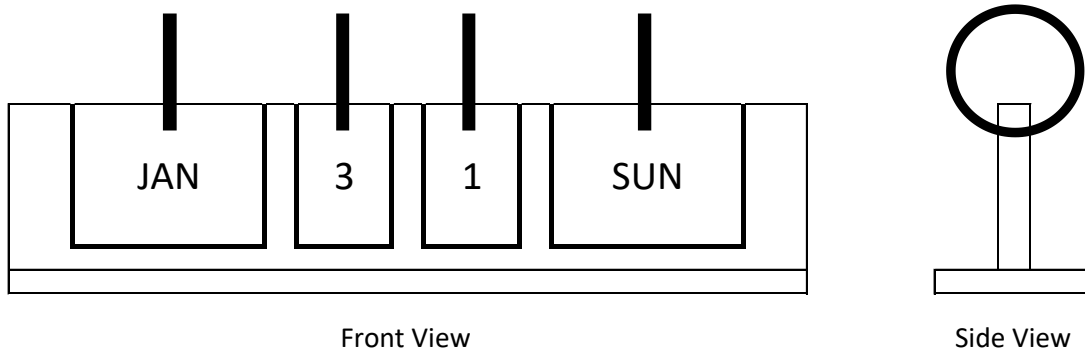
Page Calendar

The page calendar has pages to turn to display the month, the day of the month, and the day of the week. It is for use on a desk.
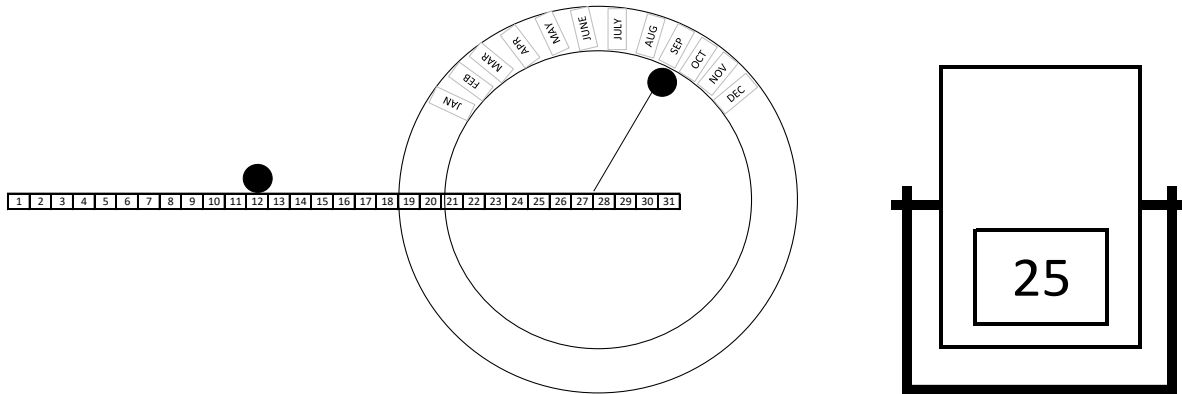
Magnetic Calendar and Flip Calendar

The magnetic calendar has magnets embedded in a long strip to hold a ball in place to indicate the day of the month. There are also magnets embedded in the circle holding a ball on a string in place to indicate the month. This design is described in United States patent 6,269,563 (August 7, 2001).

The flip calendar is a novel calendar that I found after I had written my book. It has a window at the bottom of the front and a window at the top of the back. The front window displays the day of the month. When the calendar is flipped so that the bottom is now at the top, the window that was at the top of the back is now at the bottom front and the day has advanced by one. There are tiles inside the case that move from bottom to top and front to back as the calendar is flipped. This design is described in United States patents 1,681,235 (August 21, 1928) and 1,716,222 (June 4, 1929).

Standalone Calendars

The simplest standalone calendar is a lookup chart. Charts differ from other standalone perpetual calendars in that there are no moving parts. They are based on the principle that there are 14 different full-year calendars, i.e. common years can begin on any one of the seven days of the week, and so can leap years. Many different types have been made to cover several centuries. One type has a miniature full-year calendar for each of the 14 possibilities and a lookup chart where you determine which calendar applies to your year of interest.

The common rotary calendar pictured below is the only standalone perpetual calendar that I know of that is being manufactured at the present time. As can be seen, one of its major shortcomings is that the display is Sunday to Saturday only when the first of the month is on Sunday. In the setting below, the first of the month is on Thursday, so the display is Th, F, Sa, Su, M, Tu and W. Another shortcoming is that only 14 years are visible at a time, so the calendar may have to be rotated to find the year of interest. In this calendar, Sunday to Saturday is repeated three times in the inner circle to provide room for 42 years. Ten Thousand Villages

2020	2031	2019	2018	2017	2016	2027
2026	2036	2047	2035	2034	2033	2032
JAN	MAY	AUG	MAR	JUN	DEC	JUL
OCT		**FEB**	FEB		SEP	APR
			NOV			**JAN**
Th	**F**	**Sa**	**Su**	**M**	**Tu**	**W**
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Use **JAN** and **FEB** for leap years.

Common Rotary Calendar with Information on Face Redrawn for Clarity

Common Rotary Calendar Parts

sold this particular calendar in the past, but it is no longer available. The common rotary calendar that you are most likely to find on https://www.alibaba.com/ has Sunday to Saturday repeated four times in the inner circle to provide room for 56 years. The calendar is in a small flat can for carrying in a pocket. Making a metal calendar that rotates is easier than making one that needs glides for a slider.

There are some rotary calendar designs, which do not seem to be manufactured, that always display the days of the week from Sunday to Saturday. United States patent 7,140,132 (November 28, 2006) describes such a calendar that has a range from 1 CE to 7500 CE. It displays all the months of the year in 12 windows in an annulus. Although this calendar has great capability, the circular display is not as pleasing as the conventional rectangular display of a month.

United States patent 1,949,328 (February 27, 1934) describes a standalone perpetual calendar that has many similarities to mine. The configuration in the patent is a pocket calendar in an envelope with the slider pulled out to display the month of interest. The major difference between this calendar and mine is that it is set by looking at a table to find the letter for the year and then moving the slider to place the letter above the month. My calendar eliminates the lookup step and is set by simply placing the month over the year. I consider the calendar in the patent to be superior to the common rotary calendar. Unfortunately, it never became widely used. If it had, I believe that it might have evolved into a design identical to mine.

Dashed lines indicate that part of the slider protrudes out of the end of the envelope when the calendar is set.

Dark line is outline of window.

100 YEAR CALENDAR

The letters in the lookup table are in this area.

YEAR	0	1	2	3	4	5	6	7	8	9
1850										
1860										
1870										
1880										
1890										
1900										
1910										
1920										
1930										
1940										

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		
A	G	F	E	D	C	B
MAY	AUG	FEB	JUN	SEP	JUL	JAN
	L FEB	MAR		DEC	APR	OCT
		NOV			L JAN	

Directions: Find the letter for the required year, set this letter above the required month; calendar will appear above. Use L. Jan and L. Feb for leap-years only.

						1	2	3	4	5	6	7
2	3	4	5	6	7	8	9	10	11	12	13	14
9	10	11	12	13	14	15	16	17	18	19	20	21
16	17	18	19	20	21	22	23	24	25	26	27	28
23/30	24/31	25	26	27	28	29	30	31				
A	G	F	E	A	G	F	E	D	C	B	C	B

Front of Envelope and Slider of Patented Slider Calendar

The images below show the face and slider of my practical perpetual tent desk calendar. I call it a practical calendar due to its potential to replace conventional calendars in many applications. It has the advantages of being easy to set and read, and, when it is made from cardstock, it is easy to manufacture. This calendar and many others that are based on the same concepts are documented in my book "Practical Perpetual Calendars – Innovative, Convenient and Green" by James R. Saltvold.

Scenes of Alberta Canada

MEETING CREEK

Red Deer

Kananaskis Village

Elk Island National Park

Ask your library to add *Practical Perpetual Calendars - Innovative, Convenient and Green* by James R. Saltvold to their collection.

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			
LEAP YR	LEAP YR	JAN	LEAP YR	LEAP YR	LEAP YR	FEB
MAY	OCT	APR	SEP	JUN	MAR	AUG
		JUL	DEC		NOV	
COM YR	JAN	COM YR	COM YR	COM YR	FEB	COM YR
●	●	●	●	●	●	●
2000	2001	2002	2003		**2004**	2005
2006	2007		**2008**	2009	2010	2011
		2012	2013	2014	2015	**2016**
2017	2018	2019		**2020**	2021	2022
2023		**2024**	2025	2026	2027	
2028	2029	2030	2031		**2032**	2033
2034	2035		**2036**	2037	2038	2039
		2040	2041	2042	2043	**2044**
2045	2046	2047		**2048**	2049	2050
2051		**2052**	2053	2054	2055	
2056	2057	2058	2059		**2060**	2061
2062	2063		**2064**	2065	2066	2067
		2068	2069	2070	2071	**2072**
2073	2074	2075		**2076**	2077	2078
2079		**2080**	2081	2082	2083	
2084	2085	2086	2087		**2088**	2089
2090	2091		**2092**	2093	2094	2095
		2096	2097	2098	2099	

						1	2	3	4	5	6	7
2	3	4	5	6	7	8	9	10	11	12	13	14
9	10	11	12	13	14	15	16	17	18	19	20	21
16	17	18	19	20	21	22	23	24	25	26	27	28
23	24	25	26	27	28	29	30	31				
30	31											
JAN	LEAP YR	LEAP YR	LEAP YR	FEB	LEAP YR	LEAP YR	JAN	LEAP YR	LEAP YR	LEAP YR	FEB	LEAP YR
APR	SEP	JUN	MAR	AUG	MAY	OCT	APR	SEP	JUN	MAR	AUG	MAY
JUL	DEC		NOV				JUL	DEC		NOV		
COM YR	COM YR	COM YR	FEB	COM YR	COM YR	JAN	COM YR	COM YR	COM YR	FEB	COM YR	COM YR

Face and Slider of my Practical Perpetual Tent Desk Calendar

The instructions for using my tent desk calendar are as follows:
1. Move slider to set month over year.

2. Leap years are bold. Use top row of month table for January and February.
3. Ignore 29, 30 and 31 when applicable.

In the year table, common years are under the day of the week that January 1 falls on, and leap years are under the day of the week <u>after</u> the day that January 1 falls on.

Comparison of my Calendar to the Common Rotary and the Patented Slider Calendars

I developed my calendar without reference to any existing design. However, there are similarities in the month tables. If you set the slider in my calendar so that "1" is under Saturday, you will find that my month table reading right to left is the same as the rotary calendar table reading left to right. If you set the slider in my calendar so that "1" is under Sunday, you will find that my month table reading left to right is the same as the patented slider table reading right to left. The same years are in the same columns in all three calendars. These similarities, of course, are not unexpected as the basic principles of the three calendars are the same. The tables that are fixed and that move in the three calendars are compared below.

Calendar	Fixed Tables		Moving Tables	
	Tables	# of Col*		# of Col*
Common Rotary	Year & Day-of-Week	21 or 28	Day-of-Month & Month	7
Patented Slider	Day-of-Week & Month	7	Day-of-Month & Year Code	13
Practical Calendar	Day-of-Week & Year	7	Day-of-Month & Month	13

*# of Col is the number of columns in each table

The inventors of the common rotary and patented slider calendars probably followed a similar thought process to mine when I developed my month table. My first table had the same three bottom rows for common years and three similar rows for leap years. By moving leap years to different columns in the year table, and putting JAN and FEB for leap years in a separate row, March to December is the same for leap years and common years. The table below compares the user features of the three calendars.

User Feature	Common Rotary	Patented Slider	Practical Calendar
Display Sun. to Sat.	No	Yes	Yes
Number of Steps to Set	One	Two	One
Range	40 to 50 Years	100 Years	100 Years
Years Visible	14	100	100
Display Shape	Arc of a circle	Rectangle	Rectangle
Display Appearance	Poor	Good	Good
Problem Solving*	Poor	Marginal to Good	Excellent

*Problem solving is the capability finding the day of the week a particular date is on in the future or the past. It is also the capability of guessing the year when you know that an event occurred on a particular day of the week in the past.

Since my calendar is equal to or better than the other two in all of the above features, and the concepts in my calendar can be used in a multi-sheet wall calendar, I feel justified in calling my practical tent desk calendar a perpetual calendar breakthrough.