

March 10, 1959

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2,876,569

PERPETUAL CALENDAR

Filed March 27, 1957

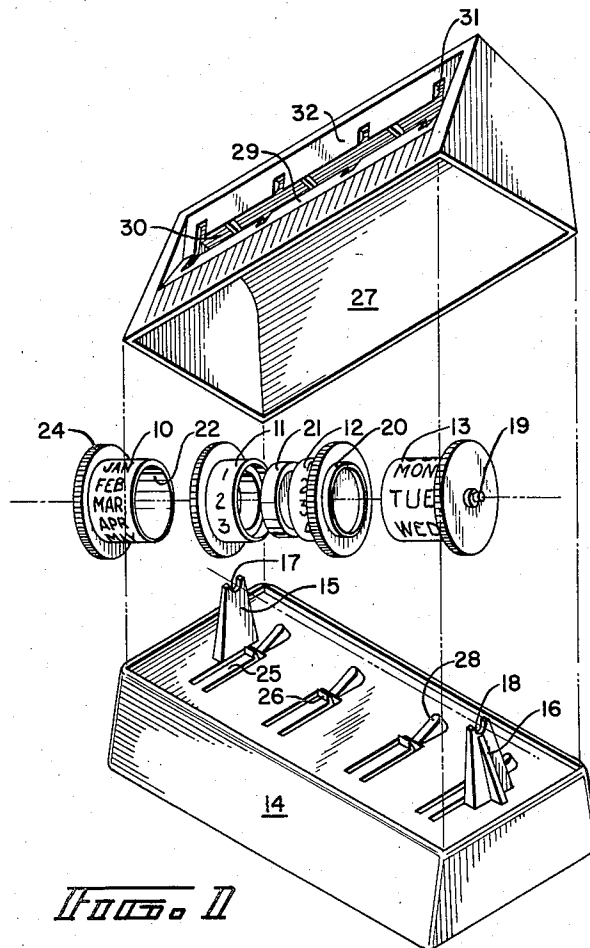


FIG. 1

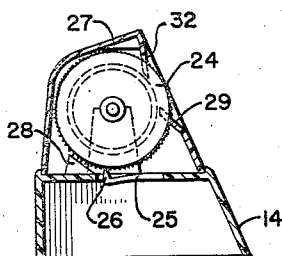


FIG. 2

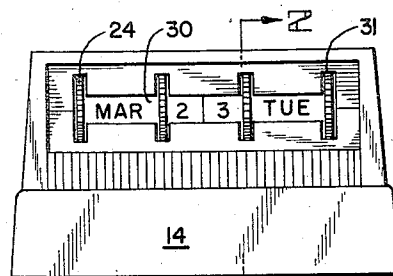


FIG. 3

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PERPETUAL CALENDAR

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Application March 27, 1957, Serial No. 648,899

4 Claims. (Cl. 40—114)

This invention relates to calendars, and particularly to a desk calendar, having individually movable members for indicating the month, the day of the month and the day of the week, which can be used for more than one year.

One of the objects of our invention is to provide a new and improved perpetual calendar which has a minimum number of moving parts and is economical to manufacture.

Another object of our invention is to provide a perpetual calendar which is preferable in many cases to the calendars heretofore used because of its ease of assembly and operation.

Still another object of our invention is to provide a perpetual calendar constructed by the mere assembly of a small number of cooperating parts, each of which is an integrally molded piece of a thermoplastic resin, such as a suitable polystyrene or polyethylene plastic.

The calendar provided according to this invention comprises a base having a pair of spaced, upwardly extending pillars, the upper edge of each of said pillars forming a bearing surface; a plurality of axially aligned rotatable members with rotary joints between them mounted between said pillars for rotation on the bearing surfaces, each of said rotatable members having at least one radially extending flange portion, pawl forming members for each of said rotatable members on a surface of said base between said pillars positioned so that each is adapted to contact the outer periphery of its corresponding flange portion, each of said flange portions being formed so as to define, in cooperation with its corresponding pawl forming member, a pawl and ratchet arrangement which resists rotational movement of the corresponding rotatable member, and means biasing said flange portions toward said pawl forming members so that when one of said rotatable members is rotated the other rotatable members will remain stationary. The flange portions preferably extend outside of a cover for the device so that each rotatable member can be rotated relative to the others by rotating its flange portion. Only a small arcuate portion of each of the rotatable members is visible from the exterior of the device at any one time. Preferably, all of the parts of the device are constructed of a suitable thermoplastic resin, such as polystyrene or a polyethylene plastic.

The foregoing and other objects, features and advantages hereof will become apparent from the following detailed description of an illustrative embodiment, while the new features of construction and operation which we claim as our invention will be set forth more particularly in the appended claims. The detailed description refers to the accompanying drawings which form a part hereof and in which:

Fig. 1 is an exploded view of the calendar of the invention;

Fig. 2 is an end view in cross-section taken along the line 2—2 of Fig. 3 looping in the direction of the arrows; and

Fig. 3 is a front elevational view of the calendar of the invention.

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As appears from the drawings, the perpetual calendar of the invention has cylinders 10, 11, 12 and 13 having indicia thereon for indicating respectively the month, the first numeral of the day of the month, the second numeral of the day of the month and the day of the week. Clearly the indicia on the cylinders may be varied as desired to indicate other subject matter or the same subject matter in a different manner. Due to the novel construction which will be described in detail hereinafter, each of the cylinders may be rotated independently of the others from the front of the device.

The base 14 has a pair of spaced, upwardly extending pillars 15 and 16 molded integrally therewith. Curved indentations 17 and 18 on the upper edges of the pillars form bearing surfaces for axle forming extensions or trunnions 19 on cylinders 10 and 13.

Axial flanges, on cylinder 11 and on cylinder 12, such as flange 20 on cylinder 12, and disc 21 keep the cylinders in axial alignment when they are mounted on the bearing surfaces and between the pillars to form a dating assembly. The axial flanges and the disc which have a diameter smaller than the outer diameter of the cylinders slidably fit into cylindrically shaped cavities in the end of the cylinders adjacent thereto. As shown in the drawings, flange 20 fits in a cavity in cylinder 13, disc 21 fits in cavities in cylinders 11 and 12, and the flange on cylinder 11 fits in cavity 22 in cylinder 10. This construction results in each of the cylinders being rotatable relative to each other while they remain axially aligned between the pillars, without the necessity of using a shaft as the rotational axis of all of the cylinders. The elimination of the shaft reduces the cost of the material required and the cost of assembling the parts.

Peripheral flanges 24 integrally formed on cylinders 10, 11, 12 and 13 serve to resist the rotation of their respective cylinders and also serve as a means for individually rotating their respective cylinders, as described infra. Flexible fingers 25 integral with base 14 and between the pillars have upwardly extending ridges 26 on their free ends. These ridges, due to the spring action of the flexible fingers, are urged against the outer notched surface of the peripheral flanges so that each ridge, in cooperation with the peripheral flange which it contacts, forms a pawl and ratchet mechanism which resists the rotational movement of the cylinder to which the peripheral flange is attached.

In order to properly function in the manner described above, the peripheral flanges must always be in contact with the fingers and the axle forming extensions 19 must be biased toward bearing surfaces 17 and 18. To accomplish this result, a cover 27, which centers the cylinders relative to the pillars and the fingers and biases them rearwardly toward the back of the calendar, and raised portions 28, which bias the cylinders upwardly and forwardly toward the front of the calendar, are provided. The coaction of these forces on the assembly of cylinders maintains the assembly in proper position, relative to the other parts of the calendar with which it cooperates, at all times. The centering action of the cover 27 is exerted by inwardly sloping walls 32 and 29 which form the top edge and the bottom edge, respectively, of a longitudinally extending window 30 in the front face of the cover. The inner edges of these walls contact the peripheral surface of each of the cylinders forcing them rearwardly and centering them relative to the pillars and the fingers. Raised portions 28, formed as integral parts of base 14 and aligned with and spaced from the fingers, slope upwardly and rearwardly from said base and contact the outer surfaces of the peripheral flanges, thereby biasing said flanges and their associated cylinders upwardly and forwardly.

Cutouts 31 extending vertically from the top and bottom edges of longitudinal window 30 permit portions of the peripheral flanges to be accessible from the exterior of the calendar so that the cylinders can be rotated individually without interfering with the sliding contact between the longitudinal edges of the window and the cylinders.

As shown in Fig. 3, only one of the words or numerals printed on the outer periphery of each of the cylinders will be visible from the outside of the calendar through window 30, to indicate the date and other subject matter contained thereon.

The cover may be secured to the base in any suitable manner, as by glue. To further insure the strength of the calendar and to improve its appearance, the periphery of the upper surface of the base may have an upwardly extending flange into which the cover fits, in the manner shown in the drawings.

The parts of the calendar, the base, the cylinders, and the cover, are each formed by filling a mold cavity with a suitable thermoplastic resin, such as a polystyrene or polyethylene resin, while the resin is in a molten state and then cooling the molded resin. The mold cavities are shaped so that each molded piece is formed integrally with all its structural elements which cooperate with other parts of the calendar. Thus the base 14 is formed with integrally molded fingers 25 and raised portions 28; each indicating cylinder is formed integrally with its peripheral flange 24, its axial flange or flanges, and its trunnion in the case of the end cylinders; and the cover 27 is formed integrally with its sloping walls 32 and 29 and its window 30 and cutouts 31, which cooperate with the dating assembly confined between the cover and the base.

The calendar of the invention is readily assembled by aligning the cylinders, placing them in proper position on the pillars, and then positioning the cover. Such assembly is economical and can be accomplished with a minimum number of operations.

It will be evident that the invention provides a calendar of the permanent type, wherein each of the cylinders can be rotated from the outside by rotating its peripheral flange without rotating any of the other cylinders, which is inexpensive, operated with a minimum of effort and durable.

What is claimed is:

1. In a perpetual calendar, a base formed of a molded resin, a pair of spaced, upwardly extending pillars molded as part of said base, the upper edge of each of said pillars including a bearing surface, a plurality of axially aligned rotatable members with rotary joints between them mounted between said pillars for rotation on said bearing surfaces, each of said rotatable members having at least one radially extending flange portion, flexible molded fingers integral with a wall of said base between said pillars, each of said fingers contacting the outer periphery of one of said flange portions to resist rotational movement of the corresponding rotatable member, raised portions molded on said wall in spaced relation to the free ends of said fingers and which bias the cylinders upwardly and forwardly, and a cover portion fitted on said base and over said rotatable members which biases said rotatable members toward the bearing surfaces, the raised portions and the fingers so that when one of said rotatable members is rotated the other rotatable members will remain stationary.

2. In a perpetual calendar having a base with a pair of spaced, upwardly extending pillars thereon, and a cover overlying said base having openings therein, a dating assembly within said cover comprising outer cylinders having trunnions on their outer ends for rotatably mounting the assembly between said pillars and having cylindrical recesses at their inner ends, a plurality of inner cylinders having at their outer ends cylindrical axial

flanges of a diameter less than the diameter of the outer cylinders which flanges fit rotatably within the recesses in the outer cylinders to form rotary joints therewith, each of said inner cylinders having a cylindrical recess at its inner end, a cylindrical member of reduced diameter which fits rotatably within the cylindrical recess in each of said inner cylinders to form a rotary joint therebetween, so that all of the cylinders are held in axial alignment by the coaction of the pillars and the rotary joints between the cylinders, and a radially extending flange on each of the cylinders extending through said openings for rotating each cylinder relative to the other cylinders.

3. In a perpetual calendar; a base of molded resin having a pair of spaced pillars extending therefrom; a dating assembly disposed for rotation above said base, said dating assembly including outer cylinders having trunnions on their outer ends for rotatably mounting the assembly between said pillars and having cylindrical recesses at their inner ends, a plurality of inner cylinders having at their outer ends cylindrical axial extensions of a diameter less than the diameter of the outer cylinders, which extensions fit rotatably within the recesses in the outer cylinders to form rotary joints therewith, at least one of said inner cylinders having a cylindrical recess at its inner end, and means fitting within said last-named recess and coacting with the other of said inner cylinders to form a rotary joint between said inner cylinders; a flexible finger for each of said cylinders formed as an integrally molded part of said base; a radially extending flange formed as an integrally molded part of each of said cylinders, each of said fingers engaging one of said flanges to resist rotational movement of the corresponding cylinder; and a cover of molded resin on said base and fitting over said cylinders, said cover having a window therein through which a portion of each of the cylinders is visible and cut-out through which said flanges extend so that each cylinder can be rotated from outside the cover by the movement of its flange, said cover holding said flanges against their respective fingers, so that any one of said cylinders can be rotated while the others remain stationary.

4. In a perpetual calendar; a base formed of molded resin; a pair of spaced, upwardly extending pillars molded as part of said base, the upper portion of each of said pillars including a bearing surface; a dating assembly mounted between said pillars for rotation on said bearing surfaces, said dating assembly including outer cylinders having trunnions on their outer ends which rest on said pillars, two inner cylinders, and cooperating cylindrical recesses and axial extensions between the adjacent ones of said cylinders, said recesses and axial extensions being of a diameter less than the outer diameter of said cylinders and forming rotary joints between the adjacent cylinders so that said cylinders are in axial alignment and independently rotatable without need for a common shaft, each of said cylinders having at least one radially extending integrally molded flange portion; flexible molded fingers integral with a wall of said base between said pillars, each of said fingers contacting the outer periphery of one of said flange portions to resist rotational movement of the corresponding cylinder; and a cover portion fitted on said base and over said cylinders and having means thereon for biasing said cylinders toward the bearing surface and the fingers so that when one of said cylinders rotates the other cylinders will remain stationary.

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