(No Model.)

C. C. FIELDS.

REGISTER.

No. 528,509. Patented Oct. 30, 1894.

Fig. 1.

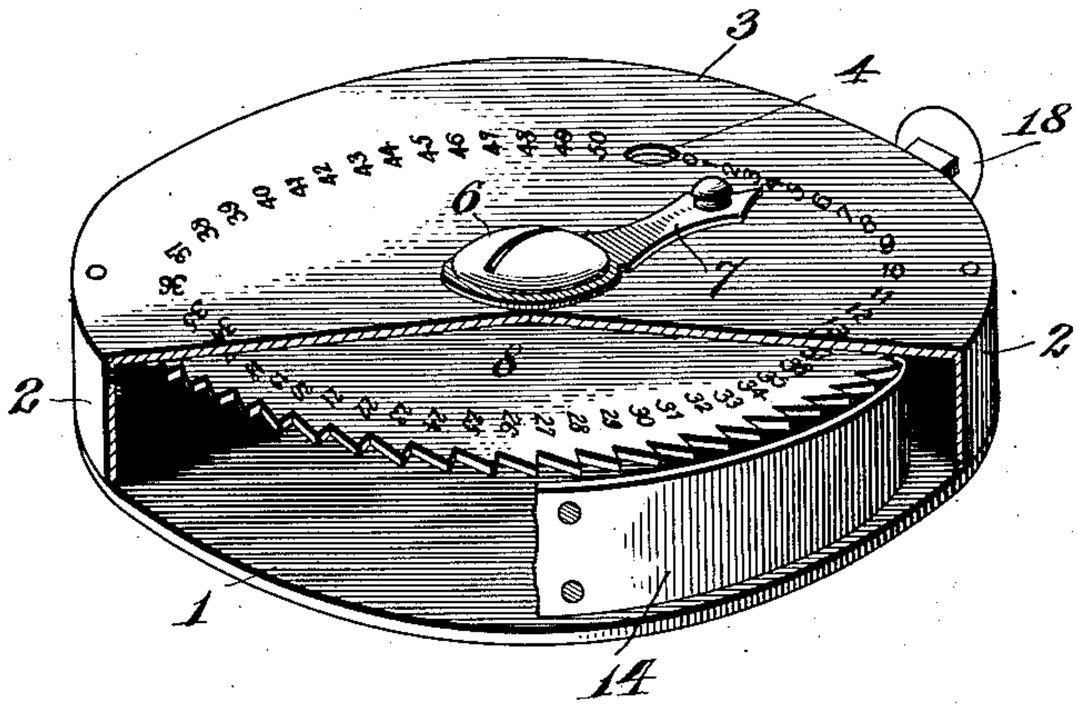


Fig. 2.

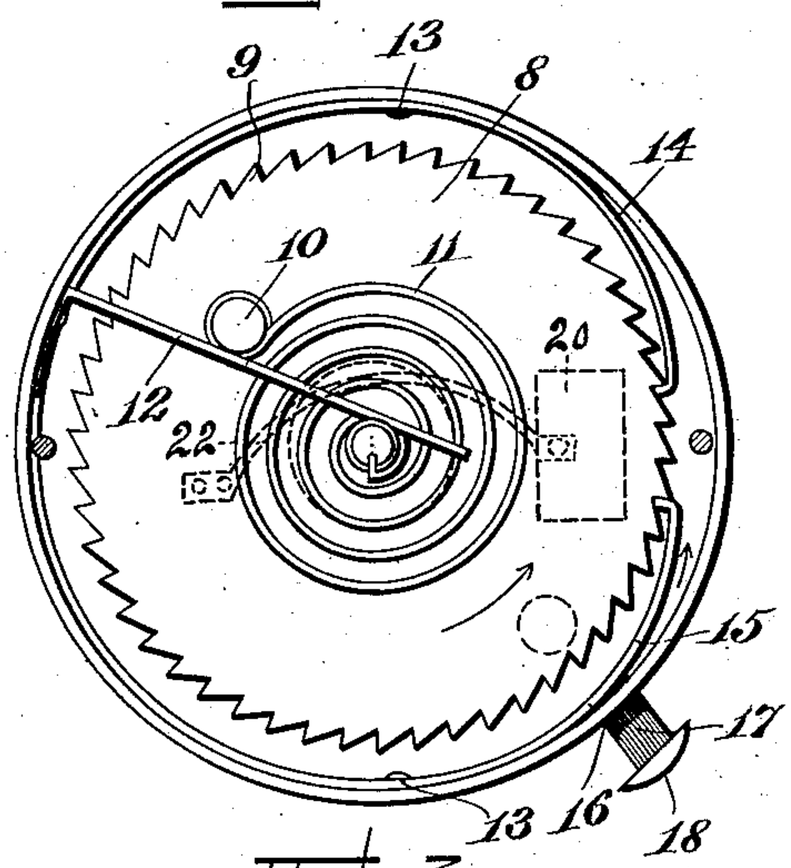
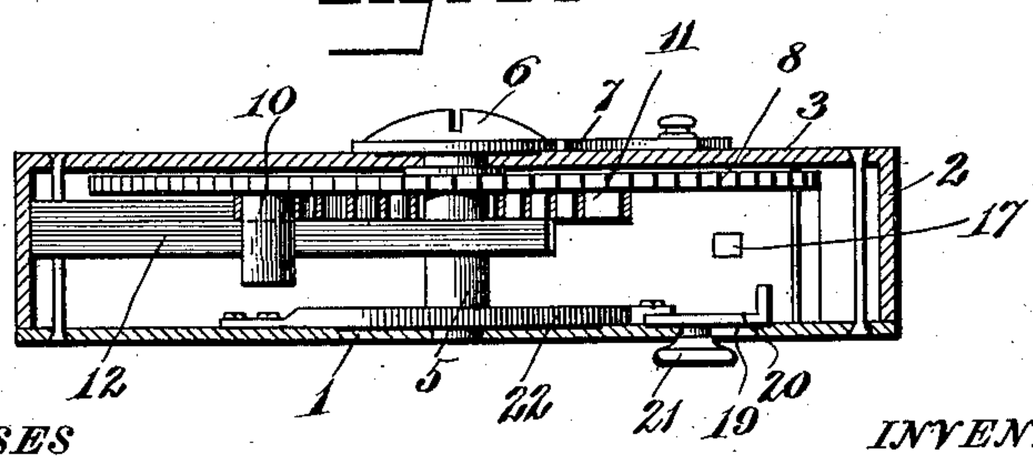


Fig. 3.



WITNESSES

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REGISTER.

SPECIFICATION forming part of Letters Patent No. 528,509, dated October 30, 1894.

Application filed April 14, 1894. Serial No. 507,592. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. FIELDS, a citizen of the United States, residing at Bristol, in the county of Sullivan and State of Tennessee, have invented certain new and useful Improvements in Registers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in registers, and has special reference to certain improvements upon United States Patent No. 499,218, granted me June 13, 1893, for a game-counter.

The objects of my improvements aside from those set forth in the above mentioned patent, are to simplify the construction of the device, reducing the number of parts to a minimum, and thus cheapen the construction of the device without impairing its operation.

With these and other objects in view, the invention consists in certain novel features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a register constructed in accordance with my invention, a portion of the casing being broken away to expose the internal mechanism. Fig. 2 is an inverted view of Fig. 1, the bottom plate of the casing being removed. Fig. 3 is a transverse sectional view through the casing, the device being in the position shown in Fig. 1, and the internal mechanism shown in elevation.

Like numerals of reference indicate like parts in all the figures of the drawings.

In the manufacture of my device I propose to make the same in small or miniature sizes whereby it is adapted to be used as a watch-charm or pendant, and also to make the same in larger sizes for more practical purposes though in each and all of the sizes the device will be capable of performing the same functions.

In the present instance I form a casing which is circular, and consists of the bottom or base-plate 1 surrounded by the annular flange or wall 2, and the upper or top-plate 3 arranged upon said wall or flange. The top-plate 3 is in reality a dial-plate, and is provided with an eccentrically located sight opening 4. Beginning at this sight opening and arranged annularly are the degrees, running from 0 to 50, in this instance, though a less number of degrees may be employed if desired. Secured in the top and bottom plates 1 and 3 of the casing thus formed, is a shaft or axis 5 which projects beyond the top-plate, having a head 6. Arranged under this head 6 and designed to revolve upon the shaft 5, is the pointer 7, the free end of which may be caused to indicate any one of the numerals arranged upon the plate 3. The pointer is provided with a knob on its numbered side by which it may be moved conveniently.

Within the casing I mount for free rotation upon the post or shaft 5, a disk 8 whose periphery is provided with inclined teeth 9. This disk is arranged immediately under the top-plate 3 and its upper side is provided with an annular series of numbers running from 0 to 50 and corresponding with those on the plate 3, and so located as to successively appear below the sight opening 4 as the disk 8 is rotated tooth by tooth. A post 10 extends from the under side of the disk, and a convolute spring 11 has one end secured to the post and its remaining portion coiled about the shaft 5 and fastened thereto. The tendency of the spring is to coil snugly about the shaft 5 and hence maintain the disk at a certain point. This tendency upon the part of the spring is limited by a stop-arm 12 that is secured to the wall or flange 2 of the casing and projects across and under the convolute spring and into the path of the post 10.

Secured to the flange or wall 2 upon the inner side thereof, and at diametrically opposite sides or points as indicated at 13, is a pair of curved inwardly disposed pawls 14 and 15, the same formed integral, the first-mentioned being a holding pawl and the last-mentioned an operating or feed pawl. Each pawl terminates in a bent end for engaging with the ratchet teeth 9 of the disk 8. An opening 16 is formed in the wall or flange 2, and a push-post or rod 17 passes through the opening and is made fast in any suitable manner to the feed-pawl 15. The post or rod 17 has a head or button 18 upon its outer end. By this arrangement of pawls it will be observed that by a depression of the post or rod

17 the curved spring pawl 15 will be caused to feed the disk one notch, and when released from pressure the pawl will return the post or rod to its normal position. The holding-pawl, as its name indicates, rides over the inclined portions of the teeth of the ratchet-disk 8 and serves to retain the disk at the point it is released by the feed-pawl.

In the bottom or base-plate 1, at a point intermediate the operating ends of the pawls 14 and 15 and between them and the center of the plate I form a radial slot 19, and above the same locate an L-shaped liberating plate 20. A button 21, or it may be an ordinary thumb-lug, is made fast to the under side of the liberating plate 20 and has its shank slidably located in the radial slot 19. A retracting spring 22 is made fast to the base-plate 1 at its free end to the inner edge of the liberating plate 20, so that the outer upturned edge of said liberating plate is normally out of contact with the free ends of the pawls 14 and 15. At the same time, however, it will be observed that by pressing outwardly against the button 21 the liberating plate may be forced outward against the tension of its spring 22 until it contacts with the free ends of the pawls 14 and 15 and raises them out of engagement with the teeth of the ratchet wheel, so that said wheel is released, and being actuated by the spring 11 will be caused to rotate backward so as to present its 0 opposite the sight opening 4 of the top-plate 3.

The device set forth is very useful in addition, inasmuch as in such operation each ten is registered in succession while the excessive tens or units are added to the next figure above or below, as the case may be, until the column is completely added, the unit remaining being placed at the foot of the column and the amount indicated by the machine is prefixed to the said remaining unit and this indicates the sum total of the said single column. In adding two columns the hundreds are registered by the machine and the units and tens are added to the numbers above or below successively, as the case may be, and in such instance the unit remaining from the first column is placed at the foot thereof and the amount indicated by the machine is carried to the next column. In adding three columns the thousands are registered by the machine and the hundreds, tens, and units are added to the numbers above or below successively, as the case may be, similarly as in adding two columns. This principle applies equally well to any number of columns which might be continued indefinitely, and it will be seen by the use of the machine in this manner the mind is not only educated for quick and expert work in addition, but is relieved of the strain resulting therefrom, and at the same time mechanically accurate results obtained.

Should the attention of the operator be called off while in the midst of a column he may by checking the point at which he left off and moving the indicator 7 to any point upon the dial to indicate the unit or units remaining to be added to the next successive figure, leave his work and return and take up the same at this point securing an accurate result as before.

The indicating hand 7 is also useful in registering the numbers of times that the ratchet-disk has rotated, and furthermore is useful in counting games, &c. In other words, I obtain the same results by the construction herein set forth as I did in my former patent, and yet simplify the construction to such a degree as to render the device capable of being more cheaply constructed and placed upon the market, and furthermore less liable to impairment by use, in that I avoid the use of pivoted pawls and their attendant cost, &c.

Having described my invention, what I claim is—

1. In a register the combination with a casing having a sight opening and a shaft arranged in the casing, of a rotatably mounted ratchet-disk upon the shaft arranged under the opening so as to expose numerals contained thereon, a curved spring pawl secured to the wall of the casing and having its free end bent to engage the teeth of the ratchet, a push-rod extending through the wall of the casing and connected to the spring-pawl, a holding pawl, means for throwing both of said pawls out of engagement with the teeth of the ratchet, and a spring for returning the disk, substantially as specified.

2. In a register the combination with a casing and its shaft, of a ratchet toothed disk arranged for movement upon the shaft under the sight opening formed in the casing, a curved spring feed-pawl secured to the inner surface of the wall of the casing, and at its free end bent to engage with the teeth of the ratchet disk, a push-bar extending through the wall of the casing and secured to the spring pawl for operating the latter, a holding pawl, a slot formed in the wall of the casing, a plate 20 mounted over the slot, a retracting spring for the plate and a projection extending through the slot and secured to the plate, whereby when pushed against the tension of the spring the plate will serve to disengage the pawls from the ratchet disk, and a spring for returning the disk, substantially as specified.

3. In a register the combination with the circular casing and its central shaft, of a ratchet disk arranged for movement upon the shaft, the two pawls 14 and 15 disposed toward each other and secured at diametrically opposite sides of the casing and having their free ends bent to engage with the teeth of the ratchet disk, a push-bar secured to one of the pawls and projecting through the casing, a liberating plate arranged in the casing, a spring for retracting the same, and a lug projecting from the plate through a slot in the casing, and a spring for returning the

disk when the pawls are liberated by contact with the plate, substantially as specified.

4. In a register the combination with a circular casing, its central shaft, a ratchet disk loosely mounted on the shaft below a sight opening formed in the casing, a post extending from the ratchet disk, a convolute spring secured to the shaft arranged around the same and secured to the post, a stop-arm extending radially from the rim of the casing into the path of the post of the disk so as to limit the movement of the disk, of a feed pawl for the disk and means for liberating the same from engagement with the teeth of the disk, substantially as specified.

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

C. C. FIELDS.

Witnesses:
S. A. CAMPBELL,
A. B. SANDERS.