

Sept. 27, 1927.

1,643,551

C. M. F. FRIDEN

REGISTER DIAL

Filed April 13, 1926

FIG. 1.

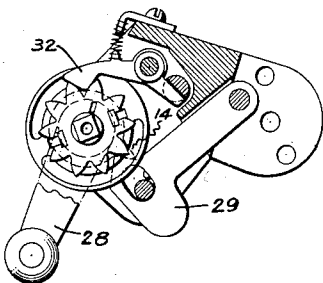


FIG. 2.

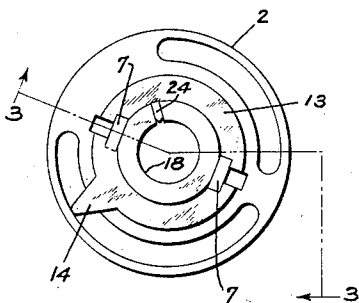


FIG. 3.

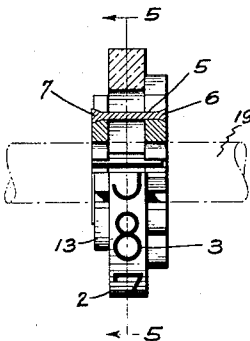


FIG. 4.

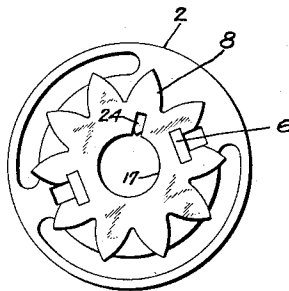


FIG. 5.

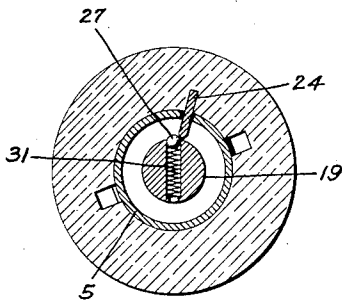


FIG. 6.

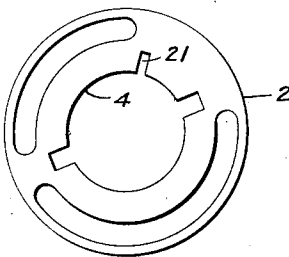


FIG. 7.

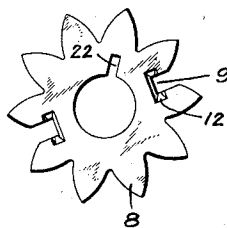


FIG. 8.

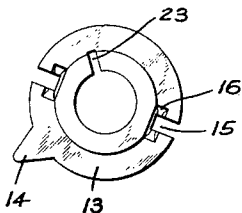


FIG. 9.

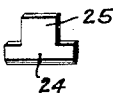
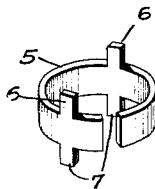


FIG. 10.



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REGISTER DIAL.

Application filed April 13, 1926. Serial No. 101,857.

The invention relates to a register dial for use in calculating machines, registering machines and other devices in which it is desirable to indicate or register different values.

An object of the invention is to provide a register dial of sturdy construction which may be accurately and cheaply produced by quantity production.

Another object of the invention is to provide a register dial with means cooperating with zero setting devices, so that the dial may be readily reset to zero.

Another object of the invention is to generally improve the construction and the process of manufacture of register dials.

The invention possesses other advantageous features, some of which with the foregoing, will be set forth at length in the following description where I shall outline in full that form of the device of my invention which I have selected for illustration in the drawings accompanying and forming part of the present specification. In said drawings I have shown one form of register dial embodying my invention but it is to be understood that I do not limit myself to such form, since the invention, as set forth in the claims, may be embodied in a plurality of forms.

Referring to said drawings:

Figure 1 is a vertical section through a register dial assembly for use in a calculating machine, showing means for preventing overthrow of the dial, the transfer lever and the crank, whereby the register may be reset to zero.

Figure 2 is a side elevation of the register dial.

Figure 3 is a section taken on the line 3—3 of Figure 2.

Figure 4 is a side elevation of the opposite side of the register dial.

Figure 5 is a section taken on the line 5—5 of Figure 3, showing the supporting shaft and the zero resetting means.

Figure 6 is a side elevation of the body of the dial.

Figure 7 is an elevation of the gear secured to one side of the body.

Figure 8 is an elevation of the single toothed operating element secured to the opposite side of the body.

Figure 9 is a detail of the blade which is operatively associated with the zero resetting device.

Figure 10 is a perspective view of the metallic band which is seated in contact with the inner periphery of the annular dial body.

The register dial of my invention comprises an annular body 2 preferably made of a light material such as celluloid and provided on its outer periphery with numerals or other characters 3, the nature of the characters depending upon the use to which the dial is put. Seated in and forming a tight joint with the inner periphery 4 of the body is a split metallic band 5, the ends thereof being slightly spaced apart as shown in Figure 10. The metallic band 5 is provided on each side with a pair of ears 6 and 7 which project beyond the sides of the dial body. Contiguous to one side of the dial body and secured to the ears 6 is a metallic operative element or gear 8, which is provided with two diametrically opposed slots 9 into which the ears 6 extend. The slots 9 are provided on the outer surface of the gear with an enlarged or spread portion 12, and the ears 6 are upset at their ends to tightly engage the enlarged portion of the slots, thereby rigidly and permanently securing the gear 8 to the band 5.

Contiguous to the other side of the body and secured to the band 5 by the ears 7 is a metallic operative element 13 having a single tooth 14. The element 13 is provided with two slots 15, which are widened at their outer ends 16, and the ears 7 extend into the slots 15 and are upset at their outer ends to fit tightly into the enlarged portion 16 of the slots, thereby rigidly and permanently securing the operative element 13 to the band 5. The gear 8 and the operative element 13 are provided with alined central circular apertures 17 and 18, through which the supporting shaft 19 extends, the register dial being rotatably mounted on the shaft 19.

The body 2 of the register dial is provided on its inner periphery with a slot 21, which is alined with the slot 22 in the gear 8 and with the slot 23 in the operative element 13. Fixed in the alined slots 21, 22 and 23 is a blade 24 which extends inward into approximate contact with the shaft 19. The blade 24 is provided on its rear face with an extension 25 which seats in the slot 21, thereby serving to lock the body 2 and the gear 8 and the element 13 together against relative rotational movement. The blade 24 also is positioned between the

spaced ends of the split band 5, thereby further locking the operative elements 8 and 13 against rotational movement with respect to the body 2.

5 The blade 24 cooperates with a spring pressed ball 27, seated in the shaft 19, to return the register dial to zero position when the shaft 19 is rotated. For this purpose the shaft 19 is usually provided with a
10 crank 28, secured to the end thereof. Rotation of the dial under the influence of the ball 27 is halted in zero position when the tooth 14 contacts with the transfer lever 29, the pressure of the spring 31 in the shaft
15 19 being insufficient to hold the ball 27 in extended position upon the application of a rotational movement to the shaft 19, when the tooth 14 is in engagement with the transfer lever. The register dial is usually advanced step-by-step by contact of suitable
20 operating means with the gear 8, thereby producing positive rotation of the register dial, which positive rotation is of sufficient force to cause movement of the transfer
25 lever 29 when the tooth 14 contacts therewith. A latch 32 is also provided in engagement with the teeth of the gear 8, to prevent overthrow of the register dial.

This structure provides a register dial of
30 sturdy construction and of simple manufacture, so that it may be readily manufactured and assembled in large quantities with a minimum of supervision and imperfection.

35 I claim:

1. A register dial comprising an annular body provided on its periphery with numerals, a flat metallic band disposed within
40 said body, ears on the band extending beyond both sides of the body and operative metallic elements contiguous with the body engaged by said ears.

2. A register dial comprising an annular body provided on its periphery with numerals, a split flat metallic band disposed within
45 said body, ears on said band extending beyond both sides of the body and operative metallic elements disposed at the sides of the body, said elements being provided
50 with slots in which the ears are disposed.

3. A register dial comprising an annular body provided on its outer periphery with numerals and on its inner periphery with a slot, a split metallic band disposed within
55 the body and a blade seated in said slot and disposed between the ends of the split band.

4. A register dial comprising an annular body provided on its outer periphery with numerals, a split metallic band forming a
60 snug fit with the inner periphery of the body, ears on said band extending beyond the sides of the body and operative metallic elements disposed at the sides of the body, said elements being provided with outward-
65 ly enlarged slots in which the ears are dis-

posed, the outer ends of the ears being upset to secure the operative elements thereto.

5. A register dial comprising an annular body of low specific gravity, provided on
70 its outer periphery with numerals, a flat metallic band seated in said body and forming a snug fit with the inner periphery thereof, means for preventing rotational movement of the band with respect to the
75 body, operative metallic elements disposed at both sides of the body and means integral with the band engaging and securing said elements.

6. A register dial comprising an annular body provided on its periphery with numerals, a split metallic band forming a snug
80 fit with the inner periphery of the body, ears on said band extending beyond the sides of the body and a gear contiguous to one side of the body, said gear being provided with a plurality of outwardly widened slots into which said ears extend, the
85 outer ends of the ears being upset into the widened slots.

7. A register dial comprising an annular
90 body provided on its periphery with numerals, operative metallic elements arranged on opposite sides of the body, means connecting said elements and extending through the central hole in the annular
95 body for securing said elements together and means for preventing rotation of the connecting means with respect to the body.

8. A register dial comprising an annular
100 body provided on its periphery with numerals, a split metallic band engaging the inner periphery of the body, ears on said band lying in the plane of the band and extending beyond the sides of the body, and
105 annular operative metallic elements arranged at the sides of the body, said elements being provided with slots in which said ears are secured, the internal diameter of the annular elements being less than the
110 diameter of the band whereby a metallic channel is formed within said body.

9. A register dial comprising an annular body provided on its outer periphery with numerals and on its inner periphery with a slot, annular operative elements disposed at
115 the sides of the body, each of said elements being provided on its inner periphery with a slot in alinement with the slot in the body and a blade seated in the alined slots.

10. A register dial comprising an annular
120 body provided on its outer periphery with numerals and on its inner periphery with a slot, a split metallic band engaging the inner periphery of the body with the split in the band in register with the slot, annular
125 operative elements disposed at the sides of the body and secured to said band, said elements being provided on their inner peripheries with slots in alinement with the slot in the body and a blade secured in the
130

slots in the operative elements and disposed in the slot in the body and in the split in the band.

11. A register dial comprising an annular body provided on its outer periphery with numerals and on its inner periphery with a slot, annular operative elements disposed at the sides of the body and having a smaller inner periphery than the body and each provided on its inner periphery with a slot in alinement with the slot in the body and a blade engaging in said three alined slots.

12. A register dial comprising an annular body provided on its outer periphery with numerals, a metallic band engaging the inner periphery of the body, a pair of ears projecting from each side of the band, a metallic operative element disposed on each side of the body provided with slots into which the ears extend, said slots being wid-

ened at their outer ends, and said ears being spread at their outer ends to fit tightly in the slots.

13. A register dial comprising an annular body provided on its outer periphery with numerals, a metallic band engaging the inner periphery of the body, a pair of ears projecting from each side of the band, a metallic gear contiguous with one side of the body, said gear being provided with slots in which one pair of ears engage tightly, and a single toothed metallic element contiguous with the other side of the body, said element being provided with slots in which the other pair of ears engage tightly, said gear and element being provided with alined circular apertures adapted to receive a supporting shaft.

In testimony whereof, I have hereunto set my hand.

CARL M. F. FRIDEN.