Feb. 8, 1966 H. A. HOFFMAN ETAL 3,233,401

REMINDER CLOCK

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Fig. 2

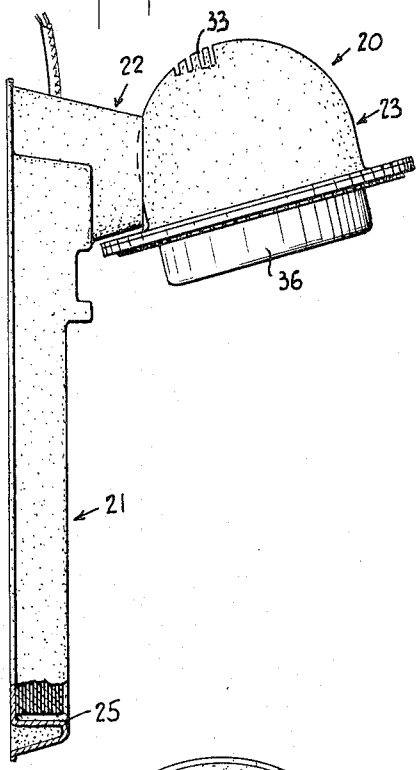

Fig. 1

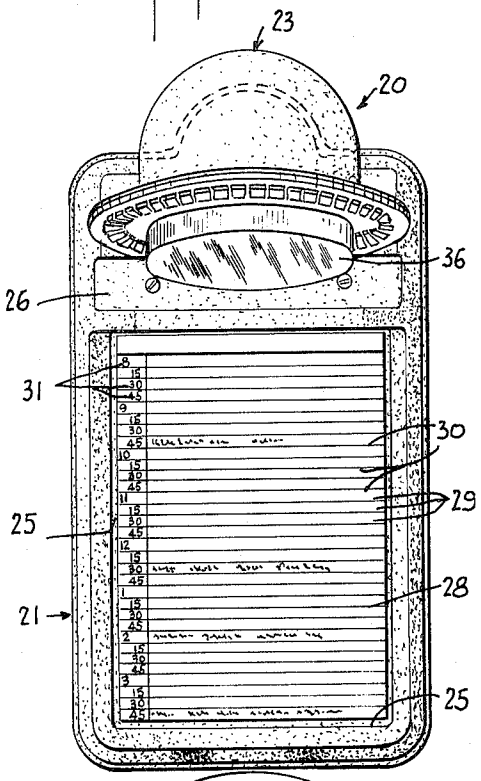

Fig. 4

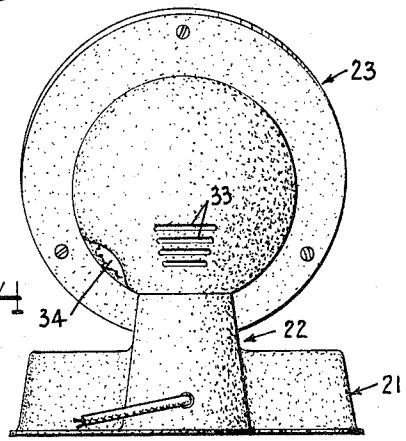

Fig. 3

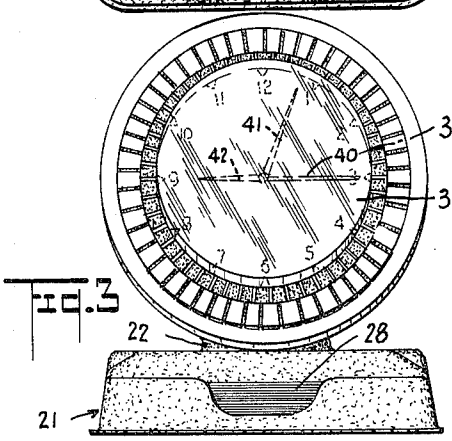

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FIG. 5

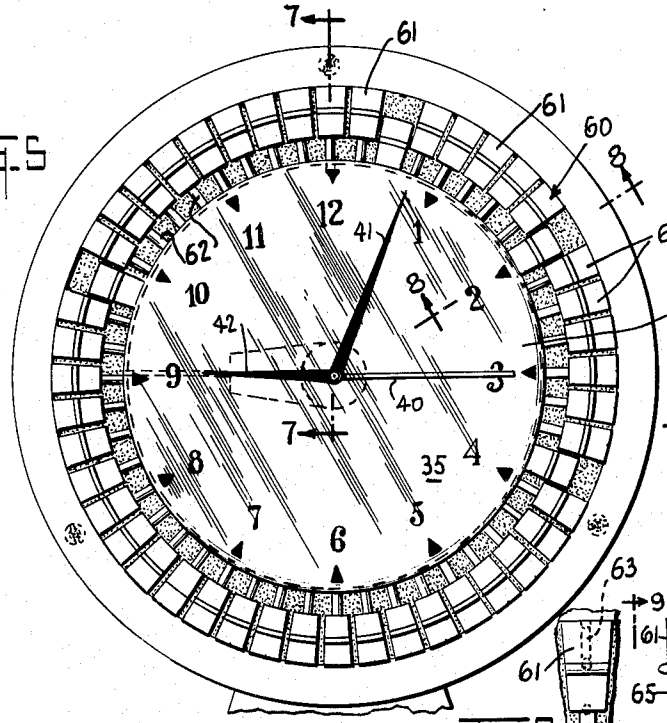


FIG. 6

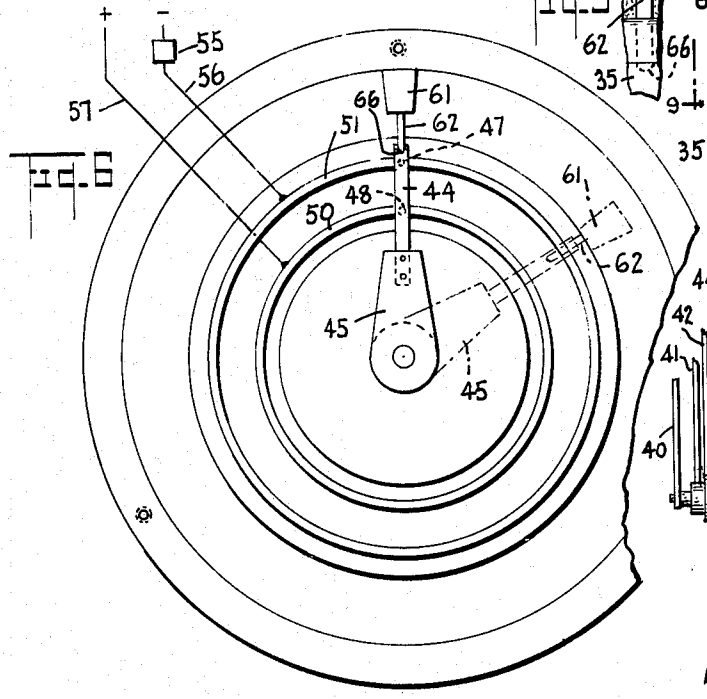


FIG. 7

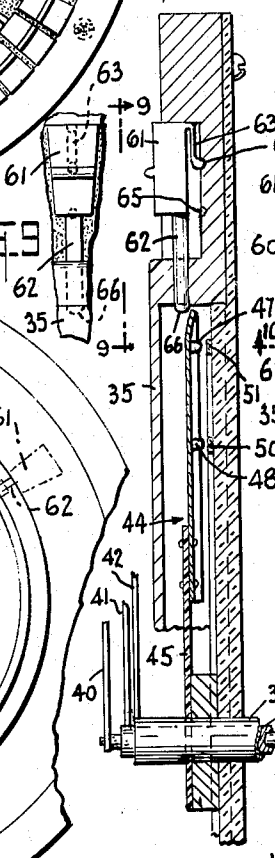


FIG. 8

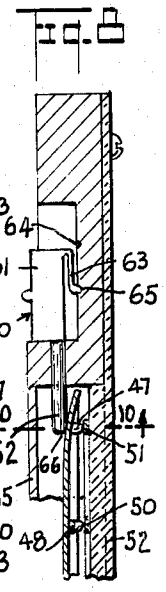
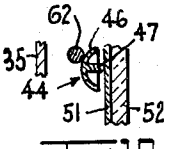


FIG. 9

FIG. 10



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3,233,401

REMINDER CLOCK

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Filed Mar. 3, 1964, Ser. No. 349,093
3 Claims. (Cl. 58—148)

This invention relates generally to present alarm signals, and is especially concerned with a unique construction and arrangement of program clock.

It is an important object of the present invention to provide a program clock which affords a visible and/or audible signal at a preset time, as a reminder of an appointment or other activity, and may be associated with a diary or writing pad subdivided into intervals having time markings for correspondence with alarm signals.

It is another object of the present invention to provide a program clock of the type described which is extremely simple to operate, being capable of use without special instruction, and which is well adapted for neat and attractive design.

Still another object of the present invention resides in the provision of a progarm clock having the advantageous characteristics mentioned in the preceding paragraphs, which is simple in construction, durable and reliable throughout a long useful life, and which can be economically manufactured for sale at a reasonable price.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

In the drawings:

FIGURE 1 is a top plan view showing a program clock constructed in accordance with the teachings of the present invention.

FIGURE 2 is a side elevational view of the program clock of FIGURE 1, partly broken away for clarity of understanding.

FIGURE 3 is a front elevational view of the clock of FIGURE 1.

FIGURE 4 is a rear elevational view of the clock of FIGURE 1.

FIGURE 5 is an enlarged front view showing the clock housing of FIGURE 1 in greater detail.

FIGURE 6 is a view similar to FIGURE 5, but with the clock face removed and parts omitted for clarity of understanding.

FIGURE 7 is a sectional view taken generally along the line 7—7 of FIGURE 5, with the clock at 12 o'clock.

FIGURE 8 is a sectional view taken generally along the line 8—8 of FIGURE 5, with the clock at 2 o'clock.

FIGURE 9 is a fragmentary view taken generally along the line 9—9 of FIGURE 7.

FIGURE 10 is a partial sectional view taken generally along the line 10—10 of FIGURE 8.

Referring now more particularly to the drawings, and specifically to FIGURES 1–4 thereof, a program clock is there generally designated **20** and includes a base **21** adapted to rest on a suitable horizontal supporting surface. Upstanding from the base **21** may be a pedestal or stand **22** which supports a clock housing **23**.

The base **21** may be of generally flat, elongate configuration having in a front portion thereof a generally rectangular, upwardly facing recess **25**. The pedestal or stand **22** may upstand from a rearward region of the base **21**, spaced from the recess **25**; and, a laterally extending upwardly facing groove **26** may be formed in the base **21** between the recess **25** and pedestal **22**.

The recess **25** is adapted to receive a diary **28**, which may assume the form of a pad of paper sheets, or the like. The sheets of diary **28** are advantageously subdivided into a plurality of spaces **29**, as by a series of spaced, parallel lines **30**. The spaces **29** are designated to correspond to respective times, say every 15 minutes, as denoted by numerals **31**, see FIGURE 1. The times indicated by numerals **31** are at 15-minute intervals, but may be otherwise, as desired. The groove **26** may serve to accommodate pencils or pens for ready access in marking of the diary **28** in appropriate spaces **29**.

Interiorly of the clock housing **23** is a clock mechanism of any suitable construction. The clock mechanism may be electrical, or mechanical, as desired. The rear side of the housing **23** may be provided with vent openings **33**, as for an electric clock, and a speed-adjustment wheel **34** may also be accessible from the rear side of clock housing **23**, as seen in FIGURE 4.

On the front side of housing **23** is a clock face **35**, which may be of the usual circular configuration, and which conceals the clockwork or mechanism. A transparent protective cover **36** may extend spacedly over the face **35**, if desired.

Projecting forwardly from the concealed clock mechanism, centrally through and beyond the face **35** may be a plurality of clock shafts, as at **37**, **38** and **39**, in FIGURE 7. The shafts **37**, **38** and **39** may be coaxial, with shafts **37** and **38** being tubular and the latter received in the former. Further, the shaft **39** may be received in the shaft **38**. The shaft **39** may serve to carry a radially projecting second hand **40**, while the shaft **38** carries a radially projecting minute hand **41**, and the shaft **37** carries a radially projecting hour hand **42**. The second, minute and hour hands **40–42** are located exteriorly or outwardly of the face **35** for coaction therewith in the conventional manner.

Also carried by the hour shaft **37**, for rotation therewith, is an arm **44**. The arm **44** includes an inner part **45** fixedly keyed to the hour shaft **37** and projecting radially therefrom for positive rotation with the hour shaft. The inner part **45** of arm **44** may be fabricated of insulating material. Secured to and extending from the inner arm part **45**, radially outward with respect to the shaft **37**, is an outer arm part **46** which may be fabricated of electrically conductive material, such as metal. The outer arm part **46** is provided on its rear or inner side with a pair of contacts **47** and **48**, respectively spaced radially inward and outward along the arm **44**. By its construction, the arm **44** is resiliently deflectable inward or rearward, and the distal end portion thereof may be of transversely arcuate configuration, as seen in FIGURE **10**.

Mounted in the housing **23**, rearward or inward of the clock face **35** and of the deflectable arm **44** are a pair of annular, exposed electrical conductors or switch contacts **50** and **51**. More specifically, the annular switch contacts **50** and **51** are arranged in concentric relation about the shafts **37–39**, being mounted on a housing wall **52** and in spaced relation with respect to each other, the former being radially inward of the latter. Further, the radially inner annular switch contact **50** has a radius substantially equal to the distance of contact **48** from the axes of shafts **37–39**, while the outer annular switch contact **51** has a radius substantially equal to the distance of the contact **47** from the axes of said shafts. The outer conductive arm part **46** thus extends radially across the annular switch contacts **50** and **51**, and the contacts **47** and **48** are respectively engageable with the contacts

50 and 51 upon rearward or inward deflection of arm 44 to the position shown in FIGURE 8.

An alarm circuit is shown in FIGURE 6, including an electrically actuable alarm 55 connected on one side to an energy source and connected on its other side by a conductor 56 to one annular contact 51. A conductor 57 may be connected from the other side of the electrical source to the other contact 50, so that the alarm circuit is open between the contacts 50 and 51. The alarm 55 may be of any suitable type, either visual, audible or both, and may be mounted in the clock housing or elsewhere, as desired. The electrical source may be either alternating or direct, of any desired type.

Thus, it will now be apparent that the arm 44 defines a switch serving to close the alarm circuit across the contacts 50 and 51 upon deflection of the arm into engagement with the contacts. The alarm is, of course, thereby energized.

Carried by the housing 23 in an annular array about the clock face 35 and exposed forwardly from the housing are a plurality of deflectors 60. The deflectors 60 are all arranged radially of the shaft axes 37–39 and longitudinally slidable radially inward and outward between operative inner positions and inoperative outer positions. More specifically, each deflector 60 includes a button part 61 mounted for radial sliding between said inner and outer positions, and an inwardly extending cam part 62 movable with the respective button part. The button parts 61, see FIGURES 7 and 8, may be provided with detent means of any suitable kind, such as the resilient detents 63 selectively engageable in recesses 64 and 65 to hold the buttons in their outer and inner positions. The cam parts 62 of the deflectors 60 may each take the form of a rod extending slidably through an apertured guide 67 and having a rounded inner end 66.

The deflectors 60 are located in positions about the clock face 35 corresponding to 15-minute intervals of the hour hand 42. This interval of deflectors 60 is thus the same as that designated on diary 28, but may, of course, be otherwise, if desired.

In FIGURE 5, it will be observed that most of the deflectors 60 are in their radially outer, inoperative positions. However, certain of the deflectors 60 have been shifted radially inward to their operative positions, such as the deflector 60 corresponding to 2 o'clock. The deflector 60 corresponding to 12 o'clock is in its outer, inoperative position. Hence, in FIGURE 7 the cam 62 of deflector 60 is withdrawn radially outward; and, upon movement of the hour hand 42 past 12 oclock; and as the switch arm 44 moves together and in alignment with the hour hand, the switch arm is not deflected by the cam 62. However, upon movement together of the hour hand 42 and switch arm 44 to 2 o'clock, as shown in FIGURE 8, the inwardly shifted deflector 60 by its cam 62 serves to deflect the switch arm 44 inward into engagement and electrical contact with both contacts 50 and 51 to close the alarm circuit. The alarm circuit is closed temporarily while the switch arm 44 is deflected by the cam 62, and until the switch arm rides past the cam and again resumes its undeflected position out of engagement with the contacts 50 and 51. Thus, it is not necessary to turn off the alarm, so that the alarm will repeat every 12 hours if desired. Of course, the deflector 60 may be shifted radially outward to prevent recurrence of the alarm, if desired. As the simultaneous engagement of contacts 47 and 48 with contacts 50 and 51 is only momentary, it will be appreciated that a minimum of wear occurs at the contacts.

Of course, upon actuation of the alarm, the user's attention is immediately attracted, whereupon he may refer to the calendar 28 for timely reminder.

From the foregoing, it is seen that the present invention provides a program clock which fully accomplishes its intended objects and is well adapted to meet practical conditions of manufacture and use.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

What is claimed is:

1. A program clock comprising a base, a housing on said base, a clock face on said housing, a clock mechanism in said housing and having hour and minute shafts projecting centrally through said face externally thereof, an alarm circuit, an alarm connected in said alarm circuit, a first annular switch contact located in said housing surrounding said shafts and connected in said alarm circuit, a second annular switch contact located within said housing surrounding said shafts and connected in said alarm circuit, a deflectable switch arm in said alarm circuit and projecting from said hour shaft for rotation therewith, and insulated therefrom, and conductor means carried by said switch arm which is deflectable into simultaneous closing engagement with said switch contacts to close said alarm circuit, and a plurality of deflectors carried by said housing in an annular array about said face, said deflectors being normally located out of the path of said switch arm and selectively shiftable into said path for deflecting said switch arm into said closing engagement, whereby said alarm is adapted to be energized at a predetermined time.

2. A program clock comprising a clock housing having a clock face, a clock mechanism in said housing and having hour and minute shafts projecting centrally through said face externally thereof, a pair of spaced annular switch contacts in said housing surrounding said shafts, an alarm circuit connected to and open between said switch contacts, a switch arm projecting fixedly from said hour shaft for rotation therewith and spacedly overlying said switch contacts, said switch arm having a conductor part extending across and bridging said switch contacts and being deflectable into simultaneous closing engagement therewith to close said alarm circuit, and a plurality of deflectors carried by said housing in an annular array about said clock face, resilient detent means releasably holding said deflectors in adjusted positions against the force of said deflected switch arm, said deflectors being normally located in inoperative positions out of the path of said switch arm and selectively shiftable to operative positions into the path of said switch arm for deflecting the latter into said closing engagement, whereby said alarm is adapted to be energized at a predetermined time.

3. A program clock according to claim 2, said deflectors being arranged at predetermined time intervals about said face and at least partially exposed through said housing for visual indication of deflector location, and a diary on said base and subdivided into said predetermined time intervals for receiving notatons corresponding to alarm settings.

References Cited by the Examiner

UNITED STATES PATENTS

1,019,193 3/1912 Schneider et al. ------ 58—19 X

FOREIGN PATENTS

642,440 9/1950 Great Britain.

1,153 7/1889 Switzerland.

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