April 6, 1937. J. H. FLEER 2,076,453

GAME TIMER

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Fig. 1

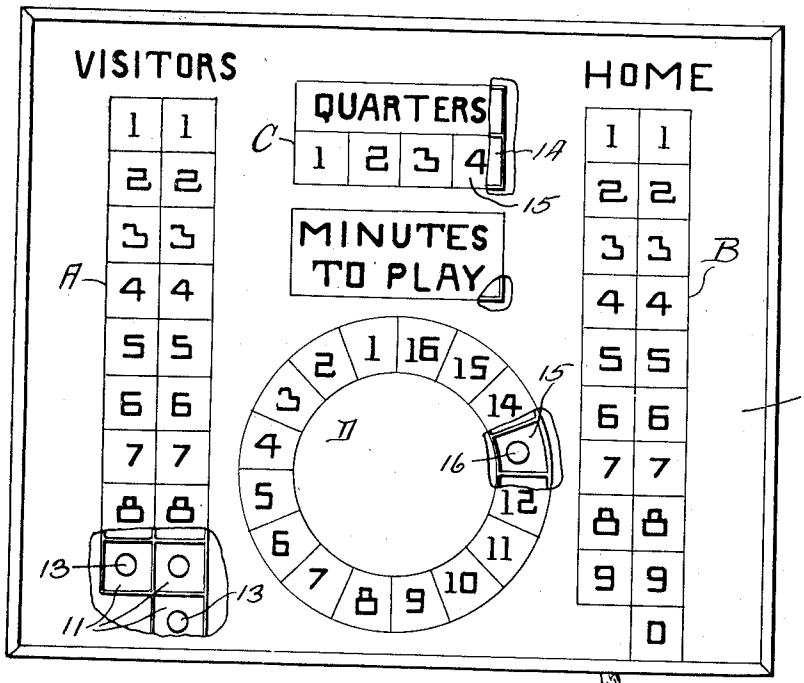


Fig. 4

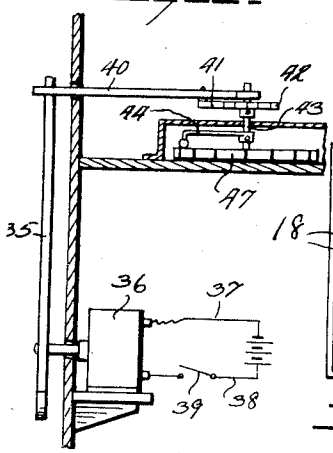


Fig. 5

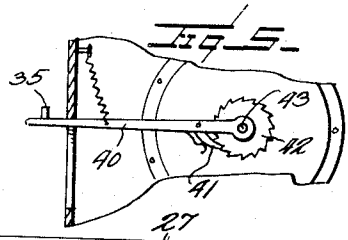


Fig. 7a

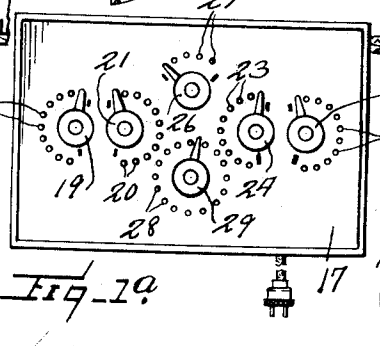


Fig. 6

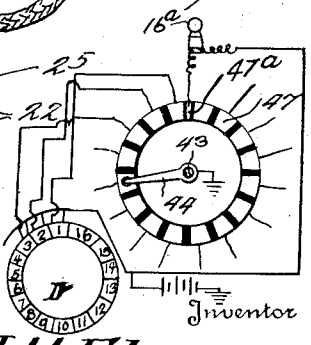
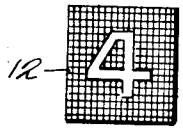


Fig. 2



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J. H. Fleer

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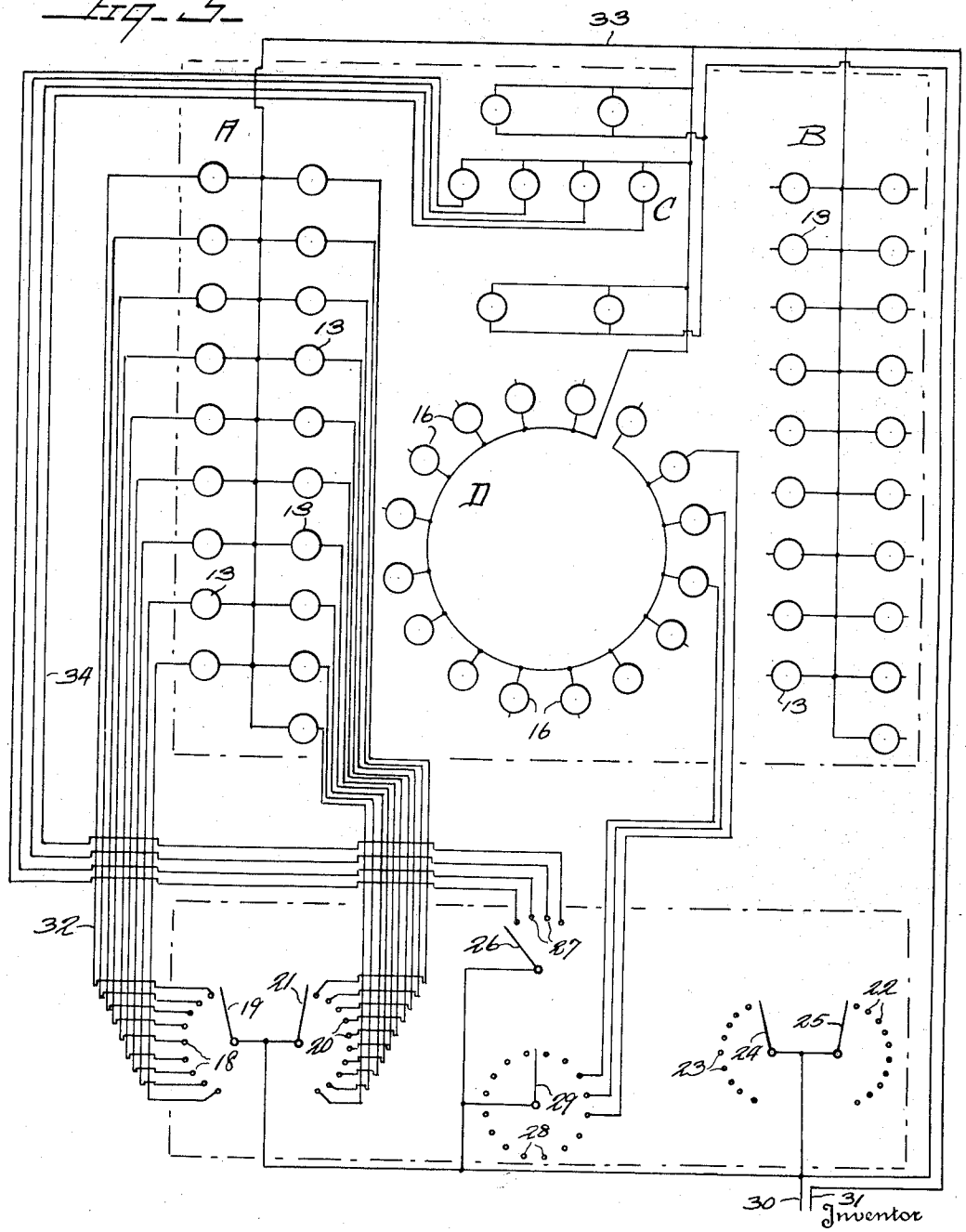
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GAME TIMER

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Fig. 4



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2,076,453

GAME TIMER

John H. Fleer, La Grange, Mo.

Application February 21, 1935, Serial No. 7,608

1 Claim. (Cl. 161—17)

This invention relates to score boards and particularly to a score board for use in the game of basket-ball.

The general object of the invention is to provide a score board of a simple character which is remotely controlled and which will indicate the score for a home team or a visiting team, which will indicate the "quarters" of the game, that is, will indicate which quarter of the game is being played, and which will have a circular dial indicating minutes to play for any particular quarter, the indicating figures both as regards the score indicators and the quarter indicator and the minutes to play indicator being illuminated by electric lamps disposed behind glass panes carrying the indicating numerals.

A further object is to provide means whereby the lamps behind the indicating numerals may be switched on or off by an attendant so that every phase of the game may be indicated on the score board and so that this score board may be controlled from a remote point.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a face view of the score board partly broken away. Figure 1a is a face view of the controlling switch board therefor.

Figure 2 is a diagrammatic face view of one of the glass or other covers for a compartment.

Figure 3 is a diagrammatic view of the switch board connections to the lights, duplicate connections being omitted.

Figure 4 is a sectional view through a clock mechanism and a clock controlled switch.

Figure 5 is a fragmentary face view of the structure shown in Figure 4.

Figure 6 is a face view of the switch.

Referring to these drawings, 10 designates the score board itself which may be made of any suitable material and behind the score board are arranged a series of compartments in which lamps are disposed. For indicating the score of the home team or the visiting team, I provide two sets of indicating numerals arranged in two vertical series. Thus in the drawing under the head of "Visitors", I have shown a vertical series of compartments designated 11, each compartment being closed by a glass pane 12 having thereon a numeral. There are nine of these compartments in the first row and the numerals read from 1 to 9. The second row under the head of "Visitors" has ten compartments reading from 1 to 0. A lamp 13 is disposed within each of these compartments and thus it will be seen that when the proper lamps are illuminated the score may be given and that by properly combining the lamps any number of the score can be indicated from 1 to 99.

A second set of compartments 11 is disposed under the word "Home" and these compartments are also provided with the lamps 13 and with the transparent or translucent panes 12 upon which numerals are disposed reading in the first column from 1 to 9 and in the second column from 1 to 0.

In the upper portion of the score board 10 there are disposed four compartments 14 arranged in a transverse series and each having a covering glass 15, the glass carrying the numerals 1, 2, 3 and 4 for each of these compartments. Above these compartments the glass contains the word "Quarters" which is constantly illuminated. The same is true with regard to the word "Visitors" and "Home", that is, that these words are constantly illuminated by lamps disposed behind these words. However, I do not wish to be limited to this as these words may be printed upon the board.

Disposed below the series of numerals designating "quarters" is a dial which indicates the "minutes to play". This dial is composed of a series of compartments 15 each of which is covered by a cover plate of glass or translucent material and these cover plates carry the numerals from 1 to 10 or preferably from 1 to 16. Within each of these compartments 15 is disposed an electric lamp 16. It will be seen that as these lamps are serially illuminated the numerals 16, 15, etc. will be displayed.

For the purpose of energizing the lamps of the set A, the lamps of the set B, the lamps of the set indicating "quarters" and designated C, or the lamps of the dial indicating the "minutes to play", I provide a controlling board designated generally 17. For the purpose of illuminating any of the lamps in the first column of the set A, I provide a series of contact points 18 arranged in a semi-circle and equal in number to the lamps of this first column of set A and coacting with these lamps is a manually rotatable brush or switch 19 having a pointer which as it rotates is brought consecutively into electrical engagement with any one of the contacts 18. For the purpose of serially energizing any of the lamps of the second column of set A, I provide the contacts 20 arranged in a semi-circle concentric to a rotatable switch 21 having a finger like the switch 19 which, when moved into engagement with any one of the contacts 20, illuminates the corresponding lamp in the second column of the set A.

Like series of contacts 22 and 23 are used for energizing the lamps of the two columns of the group or set B and like switches 24 and 25 are used for engaging these contacts. Thus any lamp or pair of lamps in the first and second columns of set B may be energized. For the purpose of energizing any one of the lamps in group C to illuminate the figures showing the quarters, I provide a switch 26 coacting with four contacts 27, one for each of the lamps in the set C, and

for energizing the lamps 16 within the clock dial, I provide sixteen contacts 28 and a rotatable switch 29 which when shifted, electrically connects the contacts with the switch and energizes the lamp. While this switch may be a clock operated switch, as will be later described, it is obvious that this switch might be rotated by hand and accomplish the same result of serially illuminating the lamps to show the gradually decreasing period of time within which play may be continued. I have shown the dial D divided into sixteen parts. This permits the use of this score board to show a 15 min. "half" as is customary in college games and also to show a 16 min. "half" and an 8 min. "quarter" for high school games. In Figure 3, I have illustrated the means whereby the switches and the contact studs may be electrically connected to the lamps. In this figure, 30 and 31 designate the wires leading from a source of current. The wire 30 is electrically connected to the switches 19 and 21 and these switches are connected respectively by wires 32 to the series of lamps in set A, these lamps in turn being connected to a return wire 33. A like connection is provided for the lamps of the set B, controlled by the switches 24 and 25. The wires 34 lead from the contacts 27 to the several lamps of the series C and these lamps are each connected to the return wire 33 in an obvious manner.

If the several lamps 16 of the clock dial are to be serially illuminated to indicate the minutes to play then the operator, as before stated, rotates the switch 29. There are sixteen of these contact points 28 connected to the respective lamps 16 and to the return wire in an obvious manner and as the operator turns this switch the lamps are serially illuminated to show that there are 16 min. to play; 15 min. to play; 14 min. to play, etc. There is an intermediate contact 47^a which is connected in circuit with a bell 16^a or other signalling device so that when the 16 min. of play have expired, the bell will be rung or other signal given. Where a clock is used, the operator need not actuate the switch 29 but the clock is provided with a hand 35 which is the hand of an electric clock, the motor designated generally 36 being at the central portion of the dial, this motor being connected by the wires 37 and 38 to a source of energy. Where a clock operated hand 35 is used rotated around the dial by means of a clock motor, a master switch is provided illustrated diagrammatically in Figure 4 and designated 39, whereby the electric motor may be stopped or started by the operator. The hand makes one complete revolution every minute but whenever "time out" is called, the operator stops the time clock motor. As soon as this "time out" period is over, he starts the electric motor. Thus the clock motor will operate continuously throughout an entire quarter, that is, until the entire quarter has been played unless there has been an interruption, in which case the operator will stop the time clock until he gets the signal to start it again.

In Figures 4, 5 and 6, I have illustrated a clock controlled means for successively energizing the lamps of the dial D. In this construction the motor operated hand 35 once during each revolution strikes the ratchet lever 40 which carries a pawl 41 operating on a ratchet wheel 42. The movement of the hand 35 shifts the ratchet lever 40 and rotates the ratchet wheel 42 which is connected to a shaft 43 which carries a switch 44, as shown in Figure 6, moving over the contacts 47 which are arranged in exactly the same manner as the contacts 28 previously referred to. As soon as the switch arm 44 moves off of one contact, the lamp 16 corresponding thereto is deenergized and the next succeeding lamp energized. Thus the operation of the clock hand 35 causes the automatic successive energizing of the lamps 16 in the several compartments of the clock dial and the final energizing of the signal 16^a. Of course, as shown diagrammatically in Figure 6, the switch arm is to be connected in circuit with the source of energy. If there is time to be taken out, the switch 39 is operated to stop the clock and as soon as the "time out" has expired, the switch is operated to again start the clock.

While in Figure 3, I have illustrated the wires leading from the control board 17 as being separated from each other, they will be, of course, in the form of a cable and the control board 17 may be disposed at any desired distance from the score board so that the score board may be placed, if desired, on some public building while the game is being played in some hall. It is obvious also that a number of score boards might be used in conjunction with the one controlling means. By placing the lamps 13 and 16 in compartments, I illuminate distinctly one particular figure without illuminating adjacent figures, the adjacent figures remaining unilluminated and practically black unless the lamps thereof are energized. Preferably the numerals will be cut-out numerals, that is, the figures or numerals will be transparent while the ground upon which the numerals are placed is opaque.

While I have illustrated the precise arrangement of lamps and indicators coacting therewith, I do not wish to be limited to this precise arrangement as many changes might be made therein without departing from the spirit of the invention as defined in the appended claim.

What is claimed is:—

A playing time indicator including a series of lamps arranged around a center and forming a circular dial, a controlling switch for the lamps including a series of contacts arranged in a circle and equal in number to the lamps, a rotatable switch movable successively over the contacts and connected to a source of current, each lamp being connected on one side to a corresponding contact and on the other side to the source of current, means for shifting said switch arm including an electric motor connected in circuit with a source of current, a manually operable switch in said circuit, means operated by the motor for intermittently shifting said switch arm successively over the several contacts, comprising a shaft on which said arm is mounted, a ratchet wheel thereon, a lever mounted on the shaft and carrying a pawl engaging the ratchet wheel, and a hand operatively connected to and rotatable by the motor in a plane at right angles to the plane of said pawl carrying lever and engaging intermittently with said lever to shift it to thereby carry the switch arm from one contact to another at each rotation of the motor.

JOHN H. FLEER.