May 7, 1957 M. VISKOZKI 2,791,047

SCORE KEEPING DEVICE

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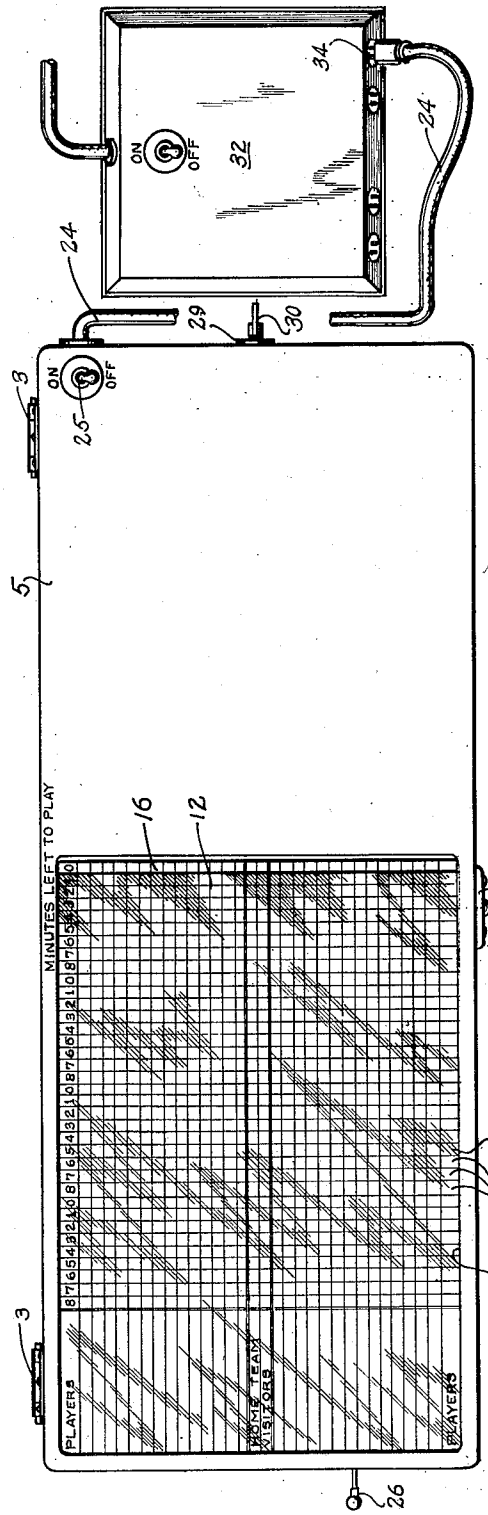


Fig. 1

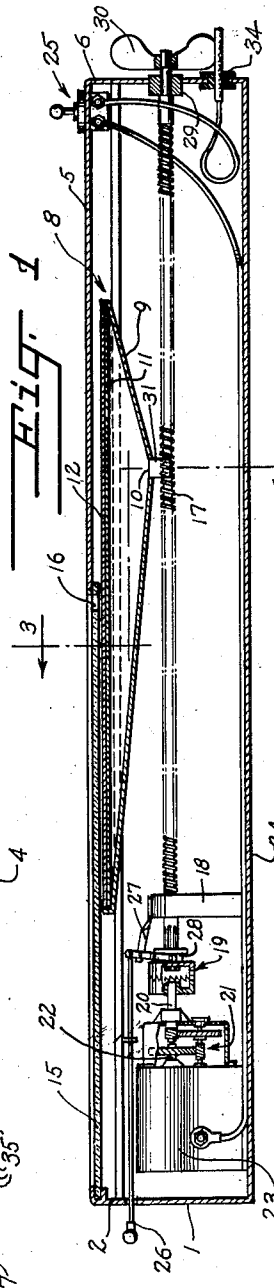


Fig. 2

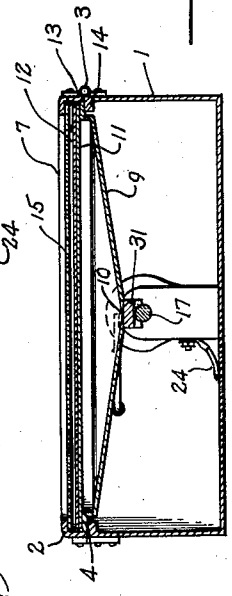


Fig. 3

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SCORE KEEPING DEVICE

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8 Claims. (Cl. 40—30)

This invention relates to devices for keeping the score, or other record, of a game or other sporting event.

An object of the invention is to provide a score keeping device which automatically indicates the playing time remaining in a game or other sporting event in progress.

Another object of the invention is to provide a score keeping device upon which may be kept, a chronological record of a game or other sporting event accurately synchronized with the official time record.

A further object of the invention is to provide a score keeping device which affords automatic means for spacing notations of game events with relation to time sequence of occurrence.

Other objects and advantages of the invention will appear in the course of the following description considered in conjunction with the attached drawing, in which:

Figure 1 is a plan view of a device of the present invention in the position it assumes at the end of a game and showing the connection between the device and the official time keeper's master switch;

Figure 2 is a side elevational view, partially in section, of the device of the present invention; and

Figure 3 is a view taken along the line 3—3 of Figure 2.

Referring now to the drawing in more detail, the illustrated device comprises a box-like housing 1 having a top 2 connected to the housing 1 for opening and closing movement thereupon, by means of hinges 3 and releasably held in the closed position by a catch 4. The top 2 consists of a face plate 5 and a flange 6 extending from the edge of the plate 5 and at right angles thereto, the flange 6 seating upon the open side of the housing 1 when the top 2 is in the closed position. The face plate 5 has a viewing opening 7 cut therein.

A score plate 8 is positioned behind the face plate 5 and is movable endwise across the viewing opening 7. The score plate 8 consists of a tray 9 having its bottom sloping downwardly from its sides and ends to an apex 10 intermediate said sides and ends. A flat base plate 11 of rigid material, is mounted within the tray 9 and bridges the sloping bottom thereof, and a score sheet 12, of paper or similar markable material, is attached upon the outer face of the base plate 11. The tray 9 is provided with shoulders 13 formed along opposed sides thereof which shoulders rest slidably upon tracks 14 extending longitudinally along the sides of the housing 1, adjacent the open side thereof. The tracks 14 slidably support the tray 9 upon the housing 1 in such a position that the score sheet 12 is in close, parallel, spaced relation with respect to the rear of the face plate 5. By the movement of the tray 9 upon the tracks 14, the score sheet 12 may be moved in opposite directions across the viewing opening 7. A sheet of transparent material 15 closes the viewing opening 7 and is secured to portions of the face plate 5 surrounding the viewing opening 7. The transparent sheet 15 is provided with

a transverse scoring slot 16 at the end of the viewing opening 7 from which the score plate 8 commences its movement across the viewing opening.

Operatively connected to the score plate 8 and intermittently movable at a speed corresponding to predetermined time intervals, are means to cause the progressive movement of the score plate 8 across the viewing opening 7 from a starting position. The means consists of a worm shaft 17 extending longitudinally of and spaced behind the score plate 8 and rotatable at a speed such that each revolution corresponds to a predetermined time interval, to cause movement of the score plate 8 progressively across the viewing opening 7. The worm shaft 17 is rotatably supported, adjacent one of its ends, in a standard 18 extending from the bottom of the housing 1. At the end adjacent the standard 18, the shaft 17 is operatively connected by means of a ratchet clutch 19 to a drive shaft 20 and thence, through a system of reduction gears 21 to the armature shaft 22 of an electric motor 23. The motor 23 is installed within the housing 1 and receives its current through an electrical cable 24 which passes through switch 25 located upon the plate 5. The worm shaft 17 may be disconnected from the motor driven shaft 20 by means of a hand operable clutch lever 26 pivotally connected to a projection 27 from the standard 18 and to the clutch section 28 and being effective to slide the clutch section 28 inwardly upon the splined end of the worm shaft 17 and out of engagement with the other clutch section. The worm shaft 17 is rotatably supported adjacent its other end in a bearing 29 carried in the adjacent end of the housing 1. The other end of the shaft 17 projects exteriorly of the housing 1 and is squared to receive a detachable wing key 30. A segmental rack 31 is dependingly fixed to the apex 10 of the tray 9 and is in meshing engagement with the worm shaft 17. Rotation of the worm shaft 17 causes the rack 31 to move longitudinally therealong drawing the score plate with it.

To synchronize the operation of the device of the present invention with the official time of the game or event, the power lead-in to the device is connected through the official time keeper's master switch 32. The free end of the cable 24 is extended through the housing 1 in an insulator 33 and is plugged into a socket 34 in the master switch 32. Thus, so long as the face plate switch 25 is in the closed position, the scoring device will be actuated in direct response to the operation of the master switch 32.

The score sheet 12, used with the device of the present invention, is marked off by parallel transversely extending lines, into columns 35 of equal width, representing each minute of playing time in the game or other sporting event to be scored and the gearing 21 is so selected that the rotation of the worm shaft 17 is of appropriate speed to draw the score plate 8 across the viewing opening 7 a distance equal to the width of one of the columns 35 in exactly one minute. In preparation for the start of the game, the score plate 8 is set with the left-hand edge of the left-hand column in line with the right-hand edge of the scoring slot 16.

When the official time keeper's master switch 32 is operated in the course of the game, the columns 35 will be moved across the slot 16 as the minutes of play which they represent transpire. Notations made upon the score sheet 12 through the slot 16 during the play will be recorded in the column representing the appropriate minute and will be spaced in relation to time sequence from all other notations made during the game, including those made in the same minute interval. At the end of the game, the sheet will show a record of all events noted during the game, accurately spaced in accordance

with the time of their occurrence. Because of the limited space available in the columns, the adoption of some abbreviated system of notations will be desirable. Inasmuch as the plate 8 moves across the opening 7 as the game progresses, all of the notations theretofore made are visible at any time during the progress of the game and at the end of the game the entire score sheet is visible. To prepare the scoring device for reuse, the key 30 is inserted upon the exterior end of the shaft 17 and turned to move the rack 31, and with it the score plate 8, back to the starting position. The top 2 is raised and a new scoring sheet substituted for the used one. The top is then closed and the clutch thrown back into engagement. The device is then ready for the throwing of the time keeper's switch. In periods of non-use, the device may be disconnected from the time keeper's circuit by turning off the switch 25.

What is claimed is:

1. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face plate and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion of the face plate across said viewing opening to a final position in registry with said viewing opening.

2. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face plate and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion of the face plate across said viewing opening to a final position in registry with said viewing opening, and manual means connected to said worm shaft and exposed beyond an end of the housing for rotating said worm shaft in the opposite direction to return the score plate to starting position.

3. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face plate and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion of the face plate across said viewing opening to a final position in registry with said viewing opening, said drive means comprising a synchronized prime mover, and ratchet clutch means operatively connecting the prime mover to the worm shaft.

4. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face plate and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion of the face plate across said viewing opening to a final position in registry with said viewing opening, said drive means comprising a synchronized prime mover, and ratchet clutch means operatively connecting the prime mover to the worm shaft, said drive means comprising a synchronized prime mover, ratchet clutch means operatively connecting the prime mover to the worm shaft, said clutch means comprising manual means for disconnecting the clutch means from the worm shaft, and manual means connected with the worm shaft and exposed outside of the housing for rotating said shaft in a direction to return the score plate to starting position while the clutch means is disconnected from the worm shaft.

5. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face plate and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion of the face plate across said viewing opening to a final position in registry with said viewing opening, a transparent sheet closing said viewing opening, said transparent sheet being provided with a slot extending crosswise of the housing and located along said edge of the viewing opening and exposing said score plate for working score data on said score plate as the score plate is moved across the viewing opening.

6. In a score keeping device, a housing having an open side, a face plate closing said open side, said face plate being provided with a viewing opening having an edge extending thereacross in spaced relation to opposite ends of said housing, said face plate having an opaque portion at one side of said viewing opening, tracks extending along said housing behind said face place and positioned on opposite edges of said face plate, a score plate positioned behind said face plate having means on opposite edges thereof supportably and movably engaging said tracks, a worm shaft mounted within said housing behind said score plate, said worm shaft extending lengthwise of said housing, a rack on said score plate meshed with said worm shaft, and drive means connected to said worm shaft for rotating said worm shaft to move said score plate from a starting position behind the opaque portion

of the face place across said viewing opening to a final position in registry with said viewing opening, a transparent sheet closing said viewing opening, said transparent sheet being provided with a slot extending crosswise of the housing and located along said edge of the viewing opening and exposing said score plate for working score data on said score plate as the score plate is moved across the viewing opening, said scoring plate having a removable scoring sheet thereon having columns successively registrable with said slot as the score plate is moved across the viewing opening.

7. In a device of the character described, an elongated housing having first and second ends and an open side, a face plate on said housing closing said open side, said face plate having an opening extending from a point intermediate the ends of the housing to a point adjacent to said first end, a worm shaft mounted on said housing behind said face plate, said worm shaft having a first end journaled on said housing near said first end of the housing and a second end journaled through said second end of the housing, motor means in the housing, means operatively connecting said motor means to said first end of the worm shaft, tracks on and extending along opposite sides of said housing behind said face plate, another plate having opposite edge portions slidably engaged in the tracks, and a rack on said other plate operatively engaged with the worm shaft.

8. In a device of the character described, an elongated housing having first and second ends and an open side,

a face plate on said housing closing said open side, said face plate having an opening extending from a point intermediate the ends of the housing to a point adjacent to said first end, a worm shaft mounted on said housing behind said face plate, said worm shaft having a first end journaled on said housing near said first end of the housing and a second end journaled through said second end of the housing, motor means in the housing, means operatively connecting said motor means to said first end of the worm shaft, tracks on and extending along opposite sides of said housing behind said face plate, another plate having opposite edge portions slidably engaged in the tracks, and a rack on said other plate operatively engaged with the worm shaft, said means comprising normally engaged clutch means having a manual releasing member arranged to be operated to disengage the clutch means, and manual means on said second end of the worm shaft for manually rotating the shaft to initially position said other plate relative to the opening while said clutch means is disengaged.

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