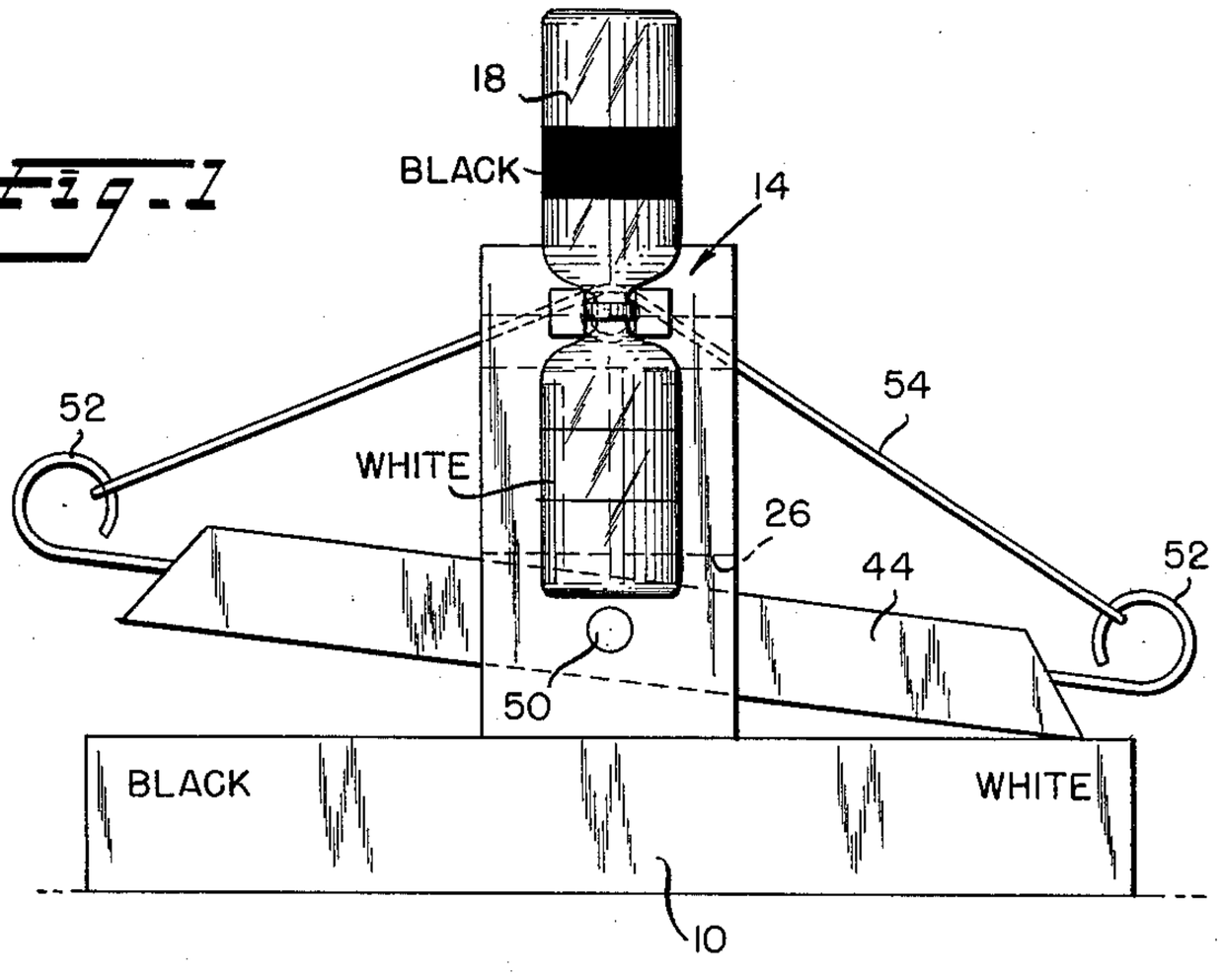
Aug. 27, 1963 M. W. PATRICK 3,101,587

HOURGLASS TIMING DEVICE

Filed Feb. 2, 1962

Fig. 1



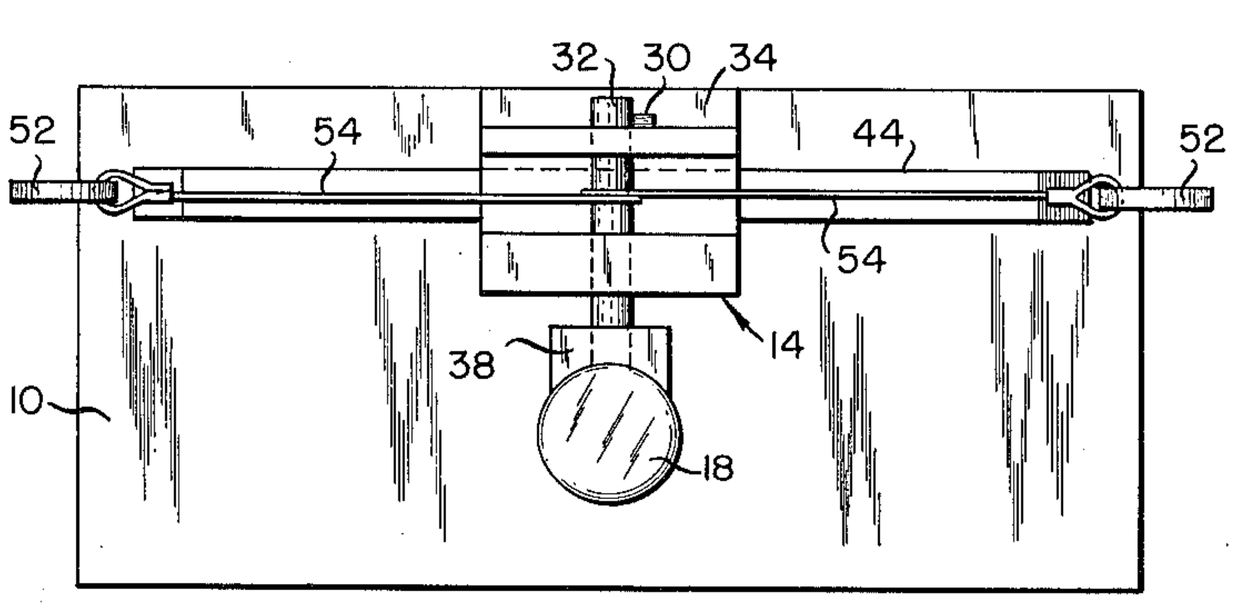


Fig. 2

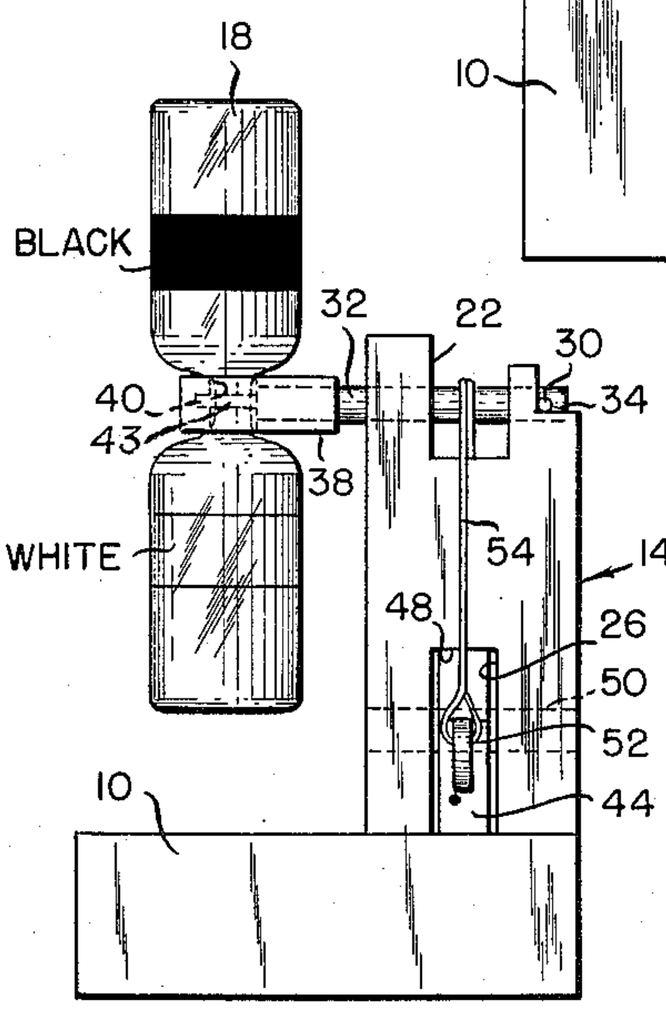


Fig. 3

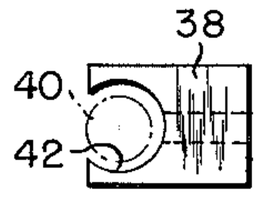


Fig. 4

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HOURGLASS TIMING DEVICE

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This invention relates primarily to a device for and method of maintaining continuous time control particularly in a game, and to a method of playing a game involving playing opponents. More particularly this invention relates to a novel timing device and method of playing a game utilizing a timing device in games, such as chess for example, and this invention will therefore be described in connection with the playing of chess although it has general applicability.

Playing at chess requires a certain amount of thinking time prior to each move on the part of each player. In friendly play this amount of thinking time may vary at random depending on the patience of each player or depending on a prior agreement to play at a certain pace. In tournament play moves are usually controlled by a dual clock which accumulates each player's thinking time against a total time limit, or some tournaments are played at a predetermined move rate, usually ten seconds. In the latter case, time is generally controlled by a timer which chimes every ten seconds to indicate the moment when each move must be made. The dual clock timer is usually controlled by a lever which starts one and simultaneously stops the other. Both clocks may be set for 1 and ½ minutes of playing time for each player. One clock is then started for the first or white player and the clocks are then alternately started and shutoff as each player makes his alternate move until one clock indicates that a player has consumed 1 and ½ total minutes, at which time the game is over. The total time of any game could never exceed three minutes and the clocks are then reset and a new game is started. Thus, while it is customary to employ timing devices in tournament chess, and optionally in non-tournament chess, all previously known timing devices in chess play have been utilized for the purpose of promoting a standard time period based on the type of tournament, generally with a penalty of game forefeiture imposed upon the player overstepping the predetermined time period.

In accordance with this invention, instead of governing both players by an inflexible time limit within which to make a certain number of moves or complete the game, each player is given a predetermined playing time reserve. During each move or play, time is deducted from the player's time reserve and an equal amount of time credited to the opponents time reserve. Each player, therefore, operates against the speed of his opponent; depletion of one player's time reserve may result in penalty or forefeiture as desired. Either player may get into time trouble, but never both at the same time whereas with a conventional chess clock mutual shortage of time often happens.

The novel timing device of the present invention establishes a playing time reserve for each player at the beginning of a game, and thereafter deducts the period consumed by each player in making a play and automatically credits an equivalent amount of time to the playing time which his opponent may have for making his next move without penalty. A premium is therefore placed on moving rapidly during each play to result in accumulation of a large playing time reserve advantage over an opponent, that may be used (1) for thinking in case of unforeseen circumstances in which case the opponent's time reserve will build up, or (2) for pressing the opponent into rapid moves under penalty of forefeiture should his time reserve run out. Thus the timing device of this invention

permits continuous playing until the playing time reserve of one player is exhausted and forefeiture or penalty imposed.

By playing a game, such as chess, with the present credit-debit timing control, variable thinking time latitudes are created thereby providing more or less playing latitude depending on the opponent and circumstances of the game. This flexible, continuously varying playing time reserve characterizes one of the features of the present invention in comparison with prior unflexible time control.

Accordingly, it is a primary object of the present invention to provide a novel timing device for use in controlling the playing time of a game such that a time advantage will accrue to the faster mover.

Another object of this invention is to provide a novel timing device which establishes a playing time reserve for each player at the outset of a game, and thereafter automatically debits a players time reserve by an amount of time equal to that which he consumes in making a certain play, and will at the same time automatically credit his opponent with an equivalent amount of time which the latter may consume without penalty in making his next move.

Another object of the present invention is to provide a novel method of playing a game such as chess or the like in which opponents make plays in a predetermined sequence, and after establishing a reserve of playing time each player may consume without penalty in making plays, timing the period consumed by each player in making each of his plays and adding the period so consumed to the playing time reserve each opponent may consume without penalty in making his next move and also subtracting the period of time from the time reserve of the playing player, and continuing playing the game until it ends according to the rules thereof or until the time reserve of either player is exhausted and the game is terminated, or another suitable penalty is imposed and the game resumed.

More particularly, it is an object of this invention to provide a novel timing device which may be utilized in a method of playing a game involving opponents as described in the preceding paragraph which is comprised of an hourglass suitably mounted and adapted to be rotated approximately 180° easily and quickly by each opponent to regulate the playing time as described briefly above and as will be more fully explained hereinafter.

Other objects and advantages of the present invention will become apparent to those skilled in this art from the appended claim, following description and accompanying drawings illustrating an exemplary preferred embodiment of this invention and in which:

FIGURE 1 is a front elevation view of a timing device embodying the principles of this invention;

FIGURE 2 is a plan view of the timing device illustrated in FIGURE 1;

FIGURE 3 is a right side elevation view of the timing device illustrated in FIGURE 1; and,

FIGURE 4 is a plan view of a part of the device illustrated in FIGURES 1–3.

Referring now to FIGURE 1, the timing device of this invention is comprised of a substantially rectangular base **10** which provides a support for the timer. A vertical bracket indicated generally as **14** is rigidly fixed to support base **10** as by screws or other suitable means, and is adapted to support hourglass **18**.

As shown in FIGURE 3, bracket **14** has a pair of slots **22** and **26** cut throughout its width from its top and bottom sides. Rotatable pivot pin **32** is received in bracket **14** and supports hourglass **18**. A stop pin **30** fixed to the end of pivot pin **32** limits rotative movement thereof to 180° by engaging ledge **34** cut into the rear wall of bracket **14**. This causes the hourglass to be positioned

in substantially vertical position as illustrated in the drawings quickly and accurately. An hourglass holder block **38** receives the forward end of pivot pin **32** and is rigidly secured therewith as by threaded engagement or by other suitable means. The narrow metering portion **40** of hourglass **18** is received in block **38** in an enlarged opening **42** as illustrated in FIGURES 3 and 4, the metering portion **40** of the hourglass being indicated by phantom lines in FIGURE 4. If desired, a suitable clamp **43** may be secured to block **38** to prevent inadvertent displacement of the hourglass.

An actuating lever **44** is located in slot **26** and is mounted for free pivotal movement between the upper surface of base **10** and the upper wall **48** of notch **26** on free pivot dowel **50**. A removable hook **52** is secured at each opposite end of lever **44** to hold a flexible band, a cord, or other suitable material **54** which may be secured thereto by tying, glue, etc., as desired. A flexible band of rubber for example, is preferred. The band is wrapped once around pin **32** as illustrated in the drawing to cause the latter to rotate approximately 180° when the lever **44** is pivoted about pin **50** as far as permitted by block **10** and slot roof **48**.

Suitable indicia such as the words "black" and "white" corresponding to the traditional color of opposing chess pieces may be placed on opposite ends of base **10** with corresponding black and white indications on opposite ends of hourglass **18** to indicate which side of lever **43** should be operated by a certain player and which side of hourglass **18** will reflect a certain player's time reserve advantage or disadvantage as the case may be.

In use, the timer is initially set so that half of the sand in the hourglass is in one side and half in the other. For example, if the total time for the sand to flow from one side to the other is three minutes as measured on a clock, then half of the sand would flow in one and one-half minutes. Thus, by starting with half the sand in each container, each side can be used as a timing device depending upon which one is up such that the sand will flow out of it. After half of the sand is placed in each side of the hourglass the latter is rotated to a vertical position with the white side of the lever up and sand begins to discharge from the white side. As the white player makes his play, he depresses lever **44** which pivots about pin **50** and pulls band **54** about pin **32** causing the latter to rotate 180° and invert the hourglass. The sand then begins to run from the black side of the hourglass into the white side during the period of time consumed by the black player's play.

As the playing time of each player is a direct function of the availability of sand in his side of the timer which in turn is not only dependent on his thinking time, but also his opponents, the total time of play for the game will normally be much greater than three minutes as in the case of previous chess timers, for example, where a conventional chess clock is used, and moreover will be dependent on more subtle conditions relative to time.

As one player is spending time determining what his best play (move) is, he is losing available time (sand is flowing from his side of the timer) and in addition he is giving his opponent time (sand is flowing into his opponent's container) which timer his opponent may use on his next move. As the game becomes more difficult the required thinking time will begin to accumulate for one and be lost by the other. The player who is either checkmated or runs out of sand first would lose the game or be otherwise suitably penalized. Thus, the total time of the game is indefinite and more latitude is available for maintaining a perspective of the game without an absolute deadline of time occurring simultaneously where each player is madly trying to make moves ahead of the clock whch often is physically impossible.

The time for playing may be arbitrarily chosen according to the size of the hourglass, metering capacity thereof or quantity of sand as desired.

While the illustrated timing device is preferred, a game may be played according to the method of determining the time each player's move consumes and debiting the player while crediting his opponent with the time so determined, with any suitable timing mechanism or method. For example an electrically controlled timing mechanism with dual time indicators may be constructed such that the indicators run in opposite directions to debit and credit time to the players during a play. An alarm may also be placed on such a device to apprise the players of the depletion of one of their time reserves.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claim are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

A timing device comprising:

(*a*) an hourglass,

(*b*) means for rotatably supporting said hourglass comprising a vertical member and a pivot pin received therein, said hourglass being secured to said pin;

(*c*) lever means pivotally mounted on said supporting means, and

(*d*) means comprising a band wrapped around said pivot pin and having opposite ends secured to opposite ends of said lever means whereby rotation of said lever effects rotation of said pin and hourglass.

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