Dec. 30, 1969 W. H. LAUBACH 3,486,754

INDIVIDUAL AND GAME SCORING MECHANISM FOR BRIDGE

Filed July 24, 1967 2 Sheets-Sheet 1

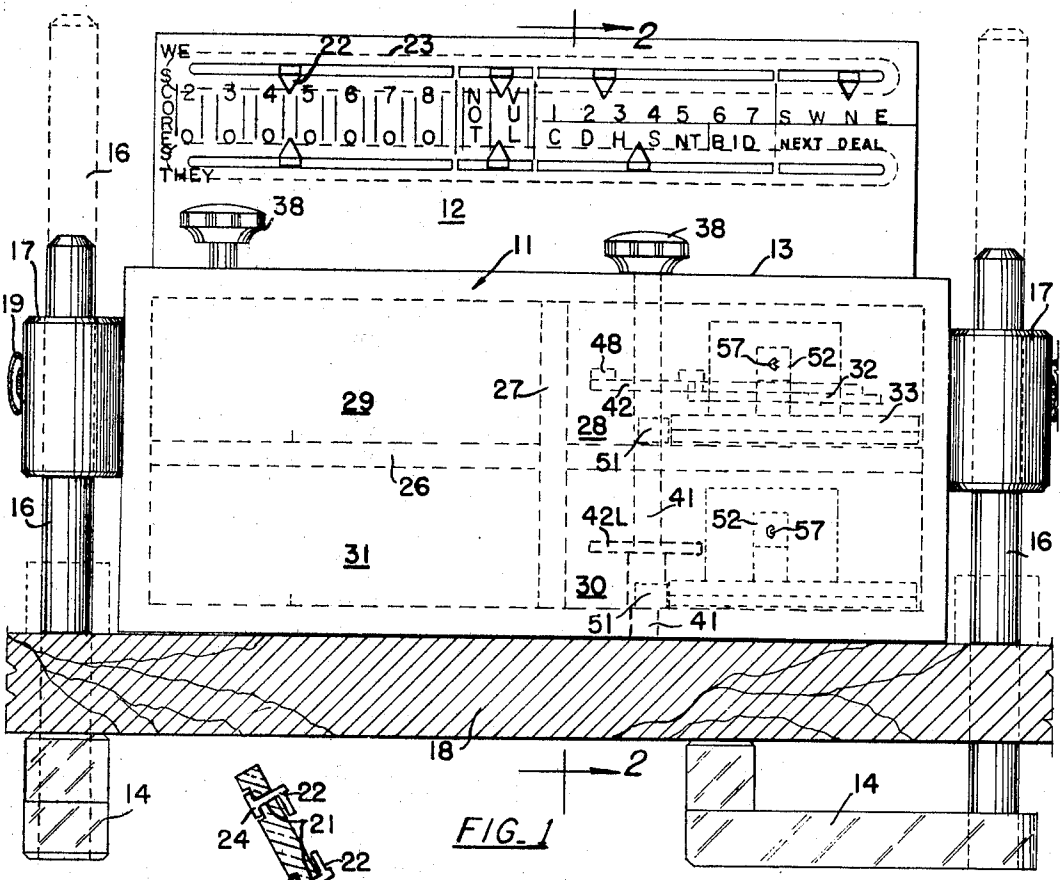


FIG. 1

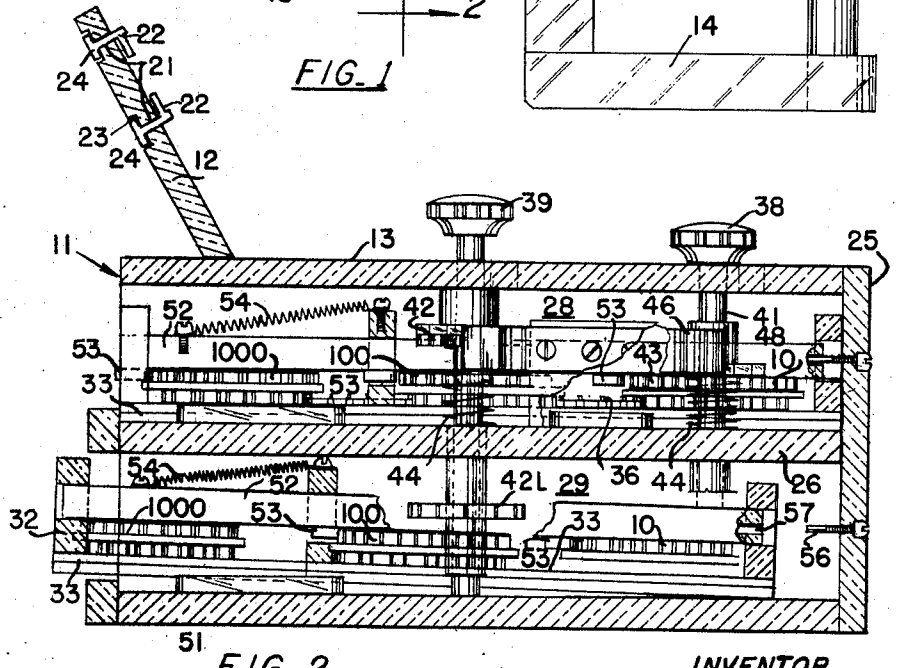


FIG. 2

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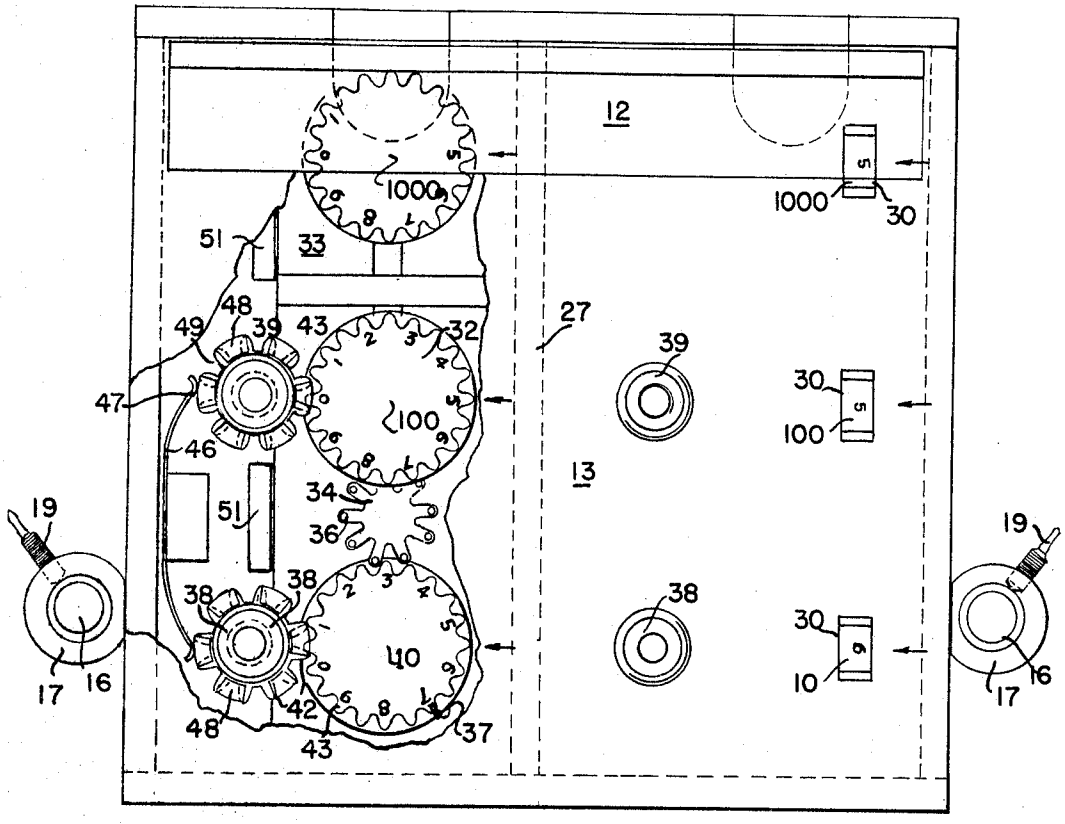


FIG. 3

11 25

DECLARER'S SCORES	BID TRICK C,D	BID TRICK H,S NT	OVER-TRICK	SLAMS SMALL	SLAMS GRAND
NOT VULNERABLE, NOT DOUBLED	20	30*	SAME	500	1000
" " , DOUBLED	40	60*	100	"	"
" " , REDOUBLED	80	120*	200	"	"
VULNERABLE, NOT DOUBLED	20	30*	SAME	750	1500
" , DOUBLED	40	60*	200	"	"
" , REDOUBLED	80	120*	400	"	"
2 GAME RUBBER-700; 3 GAME RUBBER-500; DOUBLED CONTRACT-50 5 TRUMP HONORS-150; 4 TRUMP HONORS-100; 4 ACES IN NT-150 GAME IN UNFINISHED RUBBER-300; PART SCORE FOR ONE SIDE-50					
* FIRST TRICK IN NT IS SCORED 40, 80, 160 NOT 30, 60, 120.					

FIG. 4

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INDIVIDUAL AND GAME SCORING MECHANISM FOR BRIDGE

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Int. Cl. A63f 1/18
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ABSTRACT OF THE DISCLOSURE

A mechanism providing index markers for displaying the current status of bridge games and further incorporating counter mechanisms for keeping current and cumulative scores for individual and/or partner players wherein a separate counter for an individual player may be selectively interchanged to reflect partnership changes so that each player may accumulate an individual score. A lock is used on the individual counters to prevent changes in the score indication except when the counters are installed in proper operative position.

Background of the invention

The present device is provided to facilitate the scoring of bridge games and to better keep track of individual and partner scores throughout a round of play or tournament. Others have previously provided various types of game scoring devices, boards and counters which were intended to facilitate the tabulation of game scores and the status of game operations. In the use of most prior devices, it has still been necessary to keep a written tabulation or memorandum of completed games, rubbers or sets so that accumulative partnership or individual player scores could be calculated. The present invention provides improvements over the prior art through elimination of the necessity for extra tabulating efforts.

Summary of the invention

Briefly stated, the present invention provides a mechanism which may be conveniently positioned on and attached to a game table in a position for convenient viewing by players or other interested in the status and progress of game operations. The device has a plurality of display surfaces of which game and scoring factors may be displayed as well as index markers for the display of game status items. The device further includes of plurality of counters for the tabulation and display of progressive game scores. The game status markers may be moved by the scorekeeper to reflect the present status of the game, and means is provided for the addition or subtraction of game scores by manipulation of said counters. The counters show a running tabulation of partner scores during progress of the game. In one embodiment of the invention a change in partner scores causes a corresponding change in the total score indicated on individual scoring counters for each player of the partnership. In such embodiment provision is made for the selective removal of the individual scoring mechanisms and the repositioning thereof when changes are made in partnership alignments or when individual players move to other game tables. An individual total score is progressively tabulated as the individual counter is moved from one device to another. A lock element is provided to prevent the introduction of addition scores to individual counters when the counters are removed from the device.

Brief description of the drawings

FIG. 1 is a front elevation in partial section with some parts shown in hidden outline,

FIG. 2 is a side elevation taken along the line 2—2 of FIG. 1 to show individual counters in installed and in non-engaged positions,

FIG. 3 is a top plan view of the device of FIG. 1 shown in partial broken section, and

FIG. 4 is a partial front elevation illustrating a game data display.

Description of the preferred embodiment

A preferred embodiment of the invention is shown in the accompanying figures with the general overall configuration being best illustrated in FIG. 1. In this figure it will be seen that the scoring mechanism is presented in an overall box like configuration in which a box structure **11** provides support for a status board **12** positioned at a reclining angle above the top display surface **13** of the box **11**. Since it is intended that the scoring mechanism will be positioned on the game table so that all game participants can easily see the index markings used, it is desirable to provide attaching means for holding the scoring mechanism in position on the table. FIGS. 1 and 3 show the use of clamp elements **14** which are mounted on slide bars **16** for reciprocal and rotating movement in the ferrules **17**. With this arrangement the clamps **14** may be moved to alternate positions above a supporting game table **18** or alternately to an engaged position beneath the top of table **18**. The slide bars may be held in either position or in other adjusted positions by tightening the holding screws **19**. When the clamps are properly adjusted, the box structure **11** and its associated display surfaces will be held firmly on the game table so that one hand adjustment or movement of game status indicators and counters is possible.

In general the status indicators are presented on the status board **12**. A pair of slots **21** are cut in the board **12** so that pointers **22** may be moved therealong. The top slot **21** is identified with one set of partner players, while the lower slot is identified with the opposition partners. The pointers **22** may be moved along the slots to indicate the present status of certain game operations. The horizontal movement of the pointers **22** is facilitated through provision of an undercut depression **23** on the back side of the board **12** which closely engages a retainer button segment **24** of the pointer mechanisms **22**. With this arrangement a player positioned close to the scoring mechanism can touch either the front or rear portions of the pointer **22** to move the pointer along its associated slot **21**. The pointers in the top and bottom slots can, of course, be moved independently. The moving pointers on the status board can be used to indicate: A present score for the various partner players, whether or not the partnership is vulnerable, and the actual contract bid for the game then being played. Another pointer may be used to show which player will deal the next game. All of the game status displays will be of interest to those involved in a particular game. The status information presented can also be observed by others who are not currently playing in the particular game. For outside observers, kibitzers or an instructor the game status board can provide answers to the usual questions necessary to an understanding of current game operations without the necessity of disturbing the players.

In addition to the information provided by the status board **12**, a further display panel is provided on the box **11**. In the particular embodiment illustrated, the front side or panel **25** of the box **11** provides a display surface that may be seen by all of the players. Various types of useful information concerning bid or scoring data or game rules may be presented on such display surface. A typical presentation related primarily to scoring is set forth in FIG. 4 as an illustration of the display materials presented on the front display panel **25**.

A third display surface is provided by the box **11**. The top display surface **13** is used to present a game or cumulative score for viewing by the players and observers. In order to show the point scores and to keep the score current, the present invention provides counter mechanisms **32** that may be positioned within the box **11** so that the current score can be observed through the top display surface **13** of the box **11**. The display of current totals can either be made through openings **30** in the top surface **13** exposing counter index markings or the top surface can be of a translucent material so that the counter mechanism can be observed directly through the top display surface **13**.

Various types of counter mechanisms may be used in satisfaction of the present requirements. A counter assembly using a plurality of interconnected counter wheels is preferred. The counters may have separate counter wheels for the indication of the cumulative score in units, tens, hundreds and thousands. A three-wheel counter for indicating tens, hundreds and thousands is well suited to the tabulation of bridge scores. The counters used in the present embodiment are of the 10, 100 and 1000 type with separate counters **32** being provided for the separate partnerships or even for individual players.

Though the particular operation of the counter mechanism is not of primary concern in connection with the present invention since various types of counter mechanisms can be used, the operation of a typical counter **32** is shown in FIGS. 1 and 2. The main counter wheels inclusive of the 10, the 100 and the 1000 wheel are rotatably mounted on a base **33**. An escapement mechanism **34** is disposed between the 10 and 100 wheels and between the 100 and 1000 wheels (not shown). The escapements provide a plurality of pins **36** which extend upwardly to engage with driving teeth on the underside of the higher value wheels. A single lobe **37** is provided on the lower value wheels (here disposed at the number 7 position) which will engage one of the pins **36** to move the escapement one notch for each full rotation of a lower value wheel. With this arrangement it will take 100 rotations of the 10 wheel or 10 rotations of the 100 wheel to cause one rotation of the 1000 wheel. Since bridge scoring is counted in tens and hundreds, it is desirable to be able to provide independent input to at least the 10 and 100 wheels. The counters to be used should be of a design to permit independent input movement of the 100 wheel without causing any movement or a corresponding rotation of the 10 wheel. For the counters shown the 100 wheel can be independently moved if the lobe **37** is away from contacting position with the pins **36**. Provision is made for stopping the lobe **37** away from such contacting position.

In order to hold the counters **32** in the box **11**, the box is divided by floor elements **26** and upright partitions **27** into a plurality of compartments **28**, **29**, **30** and **31**. Each of the compartments is of a size and shape to receive and hold an individual counter mechanism **32** and its separate base **33**. Optionally the scoring mechanism may be provided with two, four or six compartments depending upon the type of scoring that is to be maintained. Where partners scores only are required, it would only be necessary to provide counters **32** in the top compartments **28** and **29**. If individual scores are required, counters should be provided in at least the four compartments **28–31**. For usual contract bridge play an individual score tabulation is desirable due to the rotation of players and partners from one table to another. If it is desirable to display the current status of game operations at a particular table and also to provide cumulative individual scores for the separate players, a six compartment and six counter combination may be required. In such combination the top counters would be reset to zero after each rubber of bridge or whenever the partnership combination at the particular table is changed. Individual counters would still then be provided for each of the separate players which could show cumulative and progressive totals for each of the players. Where a four counter system is used with each of the four counters being identified with a separate player, the status of the individual games can still be determined if a notation is made of the total score entered on the counters disposed in the compartments **28** and **29** when the game is started.

Since the counters are disposed in compartments in the box **11**, some means must be provided for rotating the counters. Control knobs **38** and **39** are typically connected by the shafts **41** to drive gears **42** which may be moved into meshing engagement with the gear teeth **43** on the counter wheels 10 and 100. The shafts and control knobs are spring loaded by the springs **44** so that the knobs are normally held out of contact with the counter wheels. When a score is to be inserted, the knob **38** or **39** is depressed to bring the gear elements into contacting relationship so that the counters may then be rotated by rotating the control knobs **38** or **39**.

In order to prevent inadvertent rotation of the knobs, a control spring **46** is provided within the compartments **28** and **29** of the box **11**. The control spring **46** is of a leaf type having ends **47** for mating engagement with the teeth of the gear **42**. With the arrangement illustrated the rotation of the gear **42** a distance of two gear teeth will cause rotation of the 10 wheel one index number. Every other tooth on gear **42** is occluded by a tab **48**. This tab **48** interferes with the end **47** of the leaf spring **46** in such manner that the spring does not engage between the occluded gear teeth. This spring end **47** will, however, engage in the slot **49** between alternate gear teeth. Accordingly, a click will be experienced each time a value of 10 is being introduced into the 10 wheel or a value of 100 is added to the 100 wheel. When the proper score has been introduced, the leaf spring end to slot engagement **47–49** will tend to hold the wheels in their proper position. As long as the gears **42** are in a click-stopped position, the lobe **37** will not be in an interfering position with respect to the escapement pins **36**. The combination, inclusive of the occluding tabs **48**, the leaf spring ends **47**, the slots **49** and the teeth of gears **42** and **43**, provide indexing alignment to assure the desirable independent movement of the 10 and 100 wheels.

When more than two counters are to be used, the shaft **41** is extended into lower compartments **30** and **31** where second gear wheels **42L** are disposed. These gear wheels will be brought into simultaneous engagement with the wheels of the counter whenever the control knobs **38** and **39** are depressed. The top control spring to gear wheel **42** combination will, of course, prevent rotation of the lower gear wheels **42L** except when a score is being added to the top counter system. Any score added to the top counters will simultaneously be added to the bottom counters. Accordingly, if the individual counters for a partnership are placed in the compartments **28** and **30** while the individual counters for the opposition partners are placed in the compartments **29** and **31**, the devices can be used to accumulate individual scores. During play the top counters can be observed through the top display surface **13** or through the openings **30** so that players and outside observers can at all times see the total score accumulated. If a record is kept of the score indicated on the top counters before each game is started, the separate game scores will be available. If it is desirable to have a direct reading for current game scores, two additional compartments and two additional counters can be provided. With this arrangement the top counters can be reset to zero after each game without disturbing the cumulative scores shown on the individual counters disposed below. Where a third vertically disposed compartment is provided, the shaft **41** will be extended, and an extra gear set, such as the gears **42**, will be provided on the shaft for mating engagement with the lowest counter assembly.

As previously indicated, the individual counters **32** should be removable. Since the spring **44** normally holds the gears **42** out of contact with the counter assemblies, the counter bases **33** and counters **32** may be moved reciprocally in and out of the respective storage compartments. FIG. 2 illustrates a top counter **32** operatively positioned in the top compartment **28** and a separate individual counter assembly **32** being inserted in the lower compartment **30**. Guide blocks **51** are provided in the compartments to closely engage the bases **33** to assure proper positioning of the counters. When in proper position, the gears **42** will engage the gear teeth **43** when the knobs **38** and **39** are depressed.

In contract bridge or in various types of bridge contests or tournament play, partners are often moved from one table to another. In other types of play, individual players may be moved from one position to another as partners are interchanged or as the players are moved progressively to other tables. If each player has an individual counter, an individual total score can be derived through use of this system. Each player would carry his individual counter from place to place, and the location of the counters would be changed in separate scoring device boxes in accordance with changes in the player's partnership alignment.

When the counters are removed from the compartments, the wheels could normally be repositioned by direct finger manipulation of the wheels themselves. This movement is undesirable in the present instance, since scoring values should only be added or subtracted in accordance with game operations. A lock mechanism is provided to avoid any changes in scoring indications except when the counters **32** are disposed in the scoring devices. A lock bar **52** is provided for each of the counters **32**. This lock bar is positioned above the wheels 10, 100 and 1000 and stop elements **53** on the bottom surface of the bars **52** are disposed to engage the gear teeth **43** of the wheels. A spring **54** urges the stop elements **53** toward engagement with the gear teeth **43**. When the counters are removed from the boxes **11**, the stops **53** will be engaged, and it will be impossible to rotate the counter wheels. It is intended that a lock and key combination is to be provided in the boxes **11** so that the stops **53** will be out of contact with the wheels when the counters **32** are installed. In the present embodiment this combination includes the key element **56** and a lock receptacle **57** in the lock bar **52**. When the counters are properly positioned in the compartments, the key **56** will mate in the lock receptacle **57** to displace the bar **52** and the stop elements **53**. If the keys and receptacles

are of the distinctive shape, movement of the lock bar **52** can be prevented except when a proper key is inserted. This feature will prevent inadvertent changes on the individual scoring counters when they are removed from the boxes **11**, or it can prevent purposeful tampering with the scoring indicators.

I claim:

1. A device for the tabulation and display of bridge scores comprising a support structure, at least one separate base element for selective engagement in said support structure, a counter mechanism disposed on said separate base element for indicating points scored by a player, and input means on said support structure for engaging said counter mechanism when the base element and counter mechanism is engaged in said support structure for selectively adding and subtracting bridge score values to said counter mechanism, said base element and its associated counter mechanism being removeable from said support structure in assembled relationship whereby the score values accumulated thereon are undisturbed.

2. Structure as set forth in claim **1** wherein rotary counter mechanisms are provided.

3. Structure as set forth in claim **2** wherein said counter mechanisms include separate counter wheel elements for the tabulation of bridge scores in tens and hundreds.

4. Structure as set forth in claim **1** wherein separate counter mechanisms are provided for each individual player.

5. Structure as set forth in claim **4** wherein a single input means on said support structure is interconnectable to the counter mechanisms for two individual partnership players whereby identical changes in score are registered on the counter mechanisms for each partner player.

6. Structure as set forth in claim **1** and further comprising a lock to prevent changes in the scoring indication of said counter mechanism when the separate base element and counter mechanism is removed from the support structure.

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