June 24, 1930. F. H. BIGELOW 1,768,285

SCORE CALCULATING DEVICE

Filed Feb. 12, 1927 2 Sheets-Sheet 1

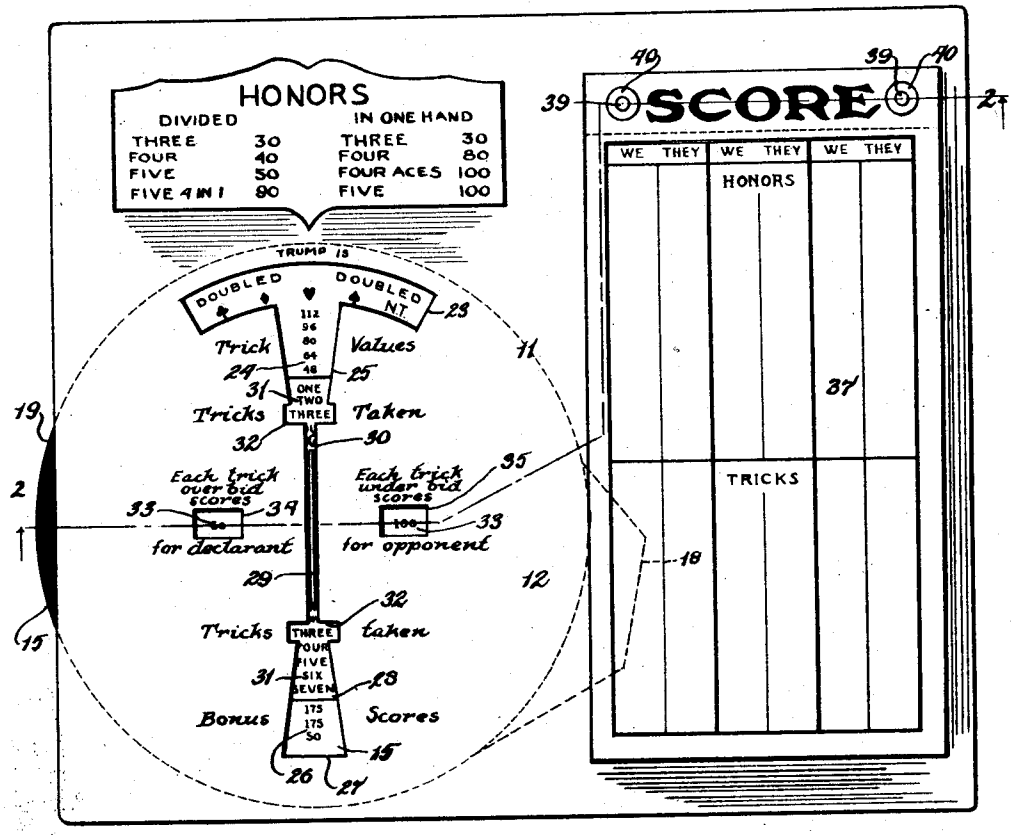


Fig. 1.

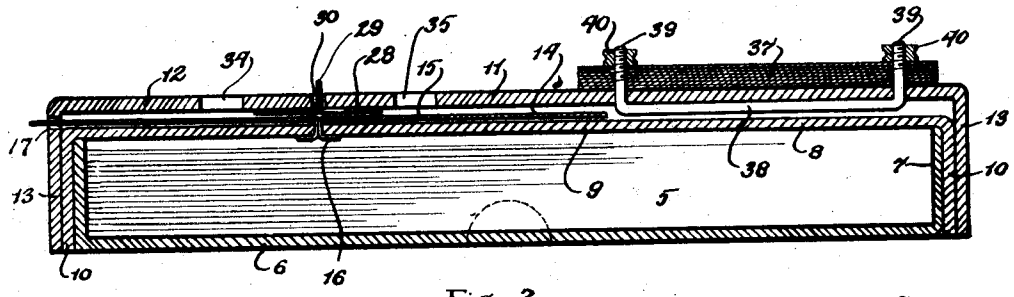


Fig. 2.

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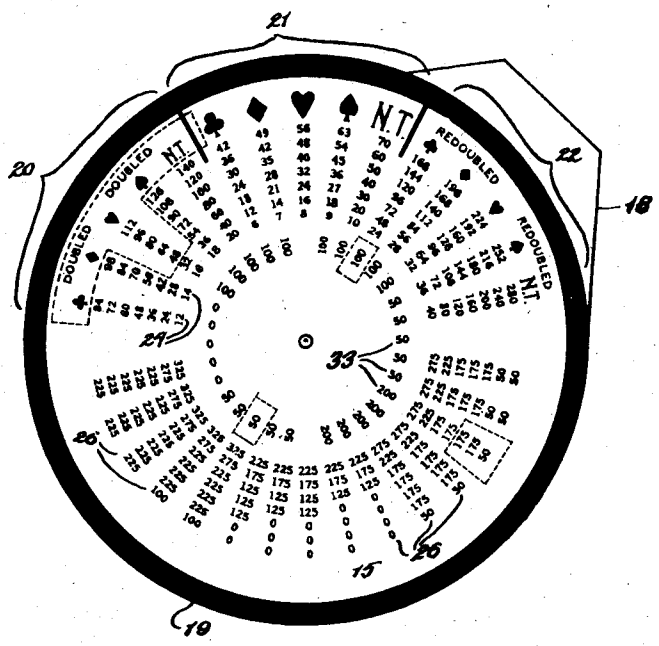


Fig. 3.

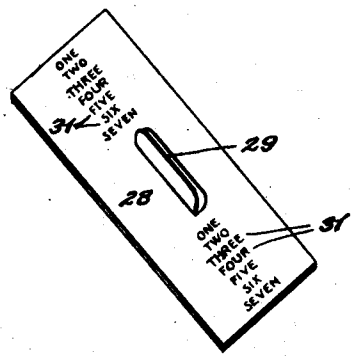


Fig. 4.

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UNITED STATES PATENT OFFICE

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SCORE-CALCULATING DEVICE

Application filed February 12, 1927. Serial No. 167,754.

This invention relates to a scoring device, and is more particularly described with reference to calculating scores in playing bridge although the same may obviously be used in connection with other games and also in other fields.

The principal objects of this invention are to provide a scoring device of this character which is simple, inexpensive, and durable in construction, which is readily manipulated and easily readable and which will calculate all possible scores with accuracy.

Further objects are to provide such a device which is attractive in appearance and is adapted to form a container or receptacle for additional decks of cards, refill score pads, pencils or the like.

In the accompanying drawings:

Figure 1 is a top plan view of a bridge scoring device made in accordance with my invention. Figure 2 is a vertical longitudinal section thereof taken on line 2—2, Fig. 1. Figure 3 is a face view of the calculating dial used in connection therewith. Figure 4 is a perspective view of the slide operated in connection with the calculating dial.

The bridge scoring device is made in the form of a flat box into the cover of which the calculating mechanism is built. The body 5 of the same is preferably made of pasteboard and may be of any usual and well known construction, having a bottom 6 and side walls 7 and lined and covered in any suitable manner to render it attractive. This body section may be made of any size but it is preferably made sufficiently large to accommodate additional decks of cards, refill score pads to be hereinafter described, or the like. The cover which fits over the body of the box is made of two sections; an inner cover section 8 having an upper wall 9 and side walls 10 which fit over the body of the box, and an outer cover section 11 having a horizontal top 12 and side walls 13 which fit over the side walls 10 of the inner cover section and are secured thereto by cementing or otherwise. The outer cover section is preferably faced with decorative paper or leather and the inner section suitably lined.

The top 12 of the outer cover section is spaced from the upper wall 9 of the inner cover section to form a compartment 14 in which the calculating mechanism is arranged. The calculating mechanism includes a dial 15 which is pivotally mounted on the upper wall 9 of the inner cover section by a clip or rivet 16 passing therethrough, and the edge of this dial projects outwardly from the cover through a slot 17 provided at one end thereof and is thereby adapted to be easily turned by the finger of the operator and moved to its proper position. To limit the turning movement of the dial, the dial is formed with an ear 18 projecting radially outward therefrom, this ear striking the walls of the box and preventing turning of the dial in either direction beyond a predetermined distance. To keep the edge of the dial attractive, the same is preferably provided with a dark border 19 which does not show finger marks.

The face of the calculating disk 15 has printed thereon a plurality of series of indicia which are adapted to be successively exposed through sight openings provided in the top 12 of the outer cover section and serve to calculate the score obtained. As best shown in Fig. 3, the top of the dial is divided into three segments, the first or left hand segment 20 referring to doubled bids, the center section 21 relating to simple bids, and the right hand section 22 relating to redoubled bids. These segments are preferably marked in duplicate at the top with the words "Doubled, and "Redoubled" so as to be plainly visible through a curved opening or window 23 in the top 12 of the upper cover section in all positions of the dial. Each of these segments contains five radially extending series or columns of figures 24, each of which represents one of the suites and each series is designated by the representation of a club, a diamond, a heart, a spade, and "N. T." or other abbreviations for no trump, the columns being preferably arranged in the order named reading from left to right. These representations of the suits are visible through the opening or window 23 as the dial is turned. The radial

columns of figures 24 represent the values of the tricks taken, and each column contains seven numbers, each indicating the trick value of each of the seven possible tricks that may be taken. The number representing the value of one trick is arranged at the inner end of each of the columns, the next succeeding number represents the value of two tricks, and the remaining numbers of each column progressively represent the values of additional tricks up to the maximum number of tricks that it is possible to take. A particular number of any of these columns is determined by the suit to which the column refers and also in accordance with whether it appears in the simple, "doubled", or "redoubled" segment, the corresponding numbers in the "doubled" segment being twice the value, and those of the "redoubled" segments being four times the value, of the figures of the simple segment. Each of these columns is adapted to be successively exposed through a radial sight opening 25 extending inwardly from the curved window 23, the sides of which opening preferably taper inwardly so as to allow as much light as possible to fall upon the figures and also permit only one column at a time to be visible through the sight opening.

Arranged radially in line with each of the columns 24 and on the opposite side of the dial is a column of figures 26, which represents the corresponding bonus values of the tricks taken and each of which is adapted to be brought into line with a radially extending sight opening 27, the sides of which are inclined to admit the maximum light to the columns. Seven numbers, corresponding to the number of tricks possible to take are contained in each column, and in the event that the value of the tricks taken does not amount to game in hand, a zero is provided in the bonus column indicating that no bonus scores were obtained. The numbers of the bonus columns are arranged in progressively increasing value from the outer side of the disk, and all of these numbers are in the same spacial relation to the corresponding numbers of the upper columns 23. For example, the number in the bonus column corresponding to 63, the number representing seven tricks in spades simple bid, is 225 which includes game, 125 points and grand slam, 100 points. A further example in a redoubled bid is the number 275 in the bonus column corresponding to the number 168, the trick value of six tricks in diamonds redoubled. This number 275 includes the bonus scores of 125 for game, 50 for a little slam, and 100 for fulfilling the contract on a redoubled bid.

To indicate the corresponding numbers of the corresponding column, in calculating the track values and bonus scores for a given number of tricks made on a successful hand, a slide 28 is arranged between the dial and the top of the outer cover section and is movable radially of the dial and is of such length as to progressively cover and uncover the corresponding numbers in the trick value and bonus value columns appearing in the in the sight openings 25 and 27. An ear or finger piece 29 is struck up from the body of this slide and extends upwardly through a slot 30 which slot extends between the upper sight opening 25 and the lower sight opening 27 and thereby permits the slide to be freely moved along the sight openings. At each end of the slide, a column 31 of trick designations representing the number of tricks is provided, these figures at the top increasing from one to seven toward the finger piece 29, and at the bottom of the slide increasing from one to seven toward the lower end of the slide. These trick designations are preferably printed in word form, and the lower end of the upper sight opening 25 and the upper end of the lower sight opening 27 are formed to provide enlargements 32 which exclusively indicate the number of tricks corresponding to the trick value indicated as the next figure above the upper edge of the slide, and the corresponding bonus value indicated as the numeral immediately below the lower edge of this slide. For instance, in the position of the parts shown in Fig. 1 and by dotted lines in Fig. 3, dial is set to indicate that the bid is in hearts, doubled, and the slide is set to indicate that three tricks have been made, the words "Three" on the slide appearing in the enlargements 32. Upon now reading the trick value column, it is found that 48 points have been made in tricks and on reading the bonus column, it is found that 175 bonus points have been made.

Provision is also made for calculating the value of each trick over the contract on a doubled or redoubled bid if the contract is made, and for calculating the penalties if the contract fails whether the bid is simple, doubled or redoubled. For this purpose, an annular row of figures 33 is provided, these figures being so arranged as to indicate the bonus that the declarant scores for each trick over his bid at a sight opening 34 provided in the top of the upper cover section to the left of the slide, and the amount of bonus the opponent scores for each trick that the declarant fails by at a sight opening 35 to the right of the slide. Thus, in a simple bid, no bonus would be scored by declarant for excess tricks, other than the trick values, and therefore when the simple segment is visible at the upper sight openings 23 and 25 in any position, zero will be indicated at the left hand sight opening 34. Inasmuch, however, as when the declarant fails on a simple bid, he is penalized 50

points for each trick he fails by, the numeral 50 appears at the right hand window, which figure need only be multipled by the number of tricks by which the declarant failed to make his bid to determine the opponent's score.

Inasmuch as the honor scores are dependent wholly upon the honors originally held by the players, they are not included in the calculating mechanism, but are tabulated on the face of the box above the tabulating windows. They are preferably tabulated in the manner shown, the values when the honors are divided being arranged on one side of the table, and the values when the honors are in one hand being arranged on the other side. The decorative margin of the table is preferably continued downwardly to indicate the trump at which the dial is set.

Assuming the bid to be three in hearts and that this bid had been doubled, the operation is as follows:

The dial is turned until the word "Doubled" appears in the window 23 and the heart column is visible through the sight opening 25. The slide is then moved longitudinally until the word "Three" appears in both of the enlargements 32 of the sight openings 25 and 27. This position of the parts is indicated in Fig. 1 and by dotted lines in Fig. 3. The hand is then played.

After the hand has been played, if there is any misunderstanding as to the contract, reference may be had to the device as set at the beginning of the hand which reveals the nature of the contract.

Assuming that the bid is made with no tricks in excess of the bid, the scorer reads the trick value of 48 points immediately above the slide in the sight opening 25, the bonus value of 175, which includes 125 points for game and 50 points for fulfilling the contract, from immediately below the slide in the sight opening 27. Inasmuch as no excess tricks were made, no points will be calculated from the left hand window 34, and the only remaining points to be calculated is the honor score taken from the honor table.

Assuming that the declarant makes but one trick over his book; in this case the trick value, bonuses and the left hand windows are disregarded, and inasmuch as the declarent failed by two tricks to make his bid, the opponent takes 200 points, or twice the number of points appearing in the right hand sight opening 35.

Assuming that the declarant makes four tricks; the slide 28 is then moved up until the word "Four" appears in the enlargements 32, and the trick value will then read 64 points, and the bonus points will total 175. Inasmuch as the doubled bid was exceeded by one trick, the declarant will take the 50 points indicated in the left hand sight opening 34.

To note the score obtained by reference to the calculating mechanism, a score pad 37 composed of a plurality of leaves printed in any well known and usual manner is mounted on the upper side of the cover at the right hand side thereof. To fasten it in place, a U-bolt 38 is provided, the cross bar of which is arranged in the compartment 14 between the top 12 of the outer cover section and the upper wall 9 of the inner cover section and the ends 39 of this U-bolt are threaded and project out through the outer cover section and the score pad. Nuts 40 are secured to the outer end of the U-bolt and secure the pad against the cover, and permit refill pads to be secured to the top when one pad is consumed.

As a whole, this invention provides a convenient receptacle for decks of cards and the like, it eliminates the possibilty of disputed contracts, it is convenient and simple to operate, it reliably calculates all possible scores whether made by declarent or opponent, and it is simple, inexpensive, and not liable to get out of alinement with constant use.

I claim as my invention:

1. In a device of the character described, a support including a front wall and a rear wall, a movable member arranged between said walls, said movable member carrying indicia, a pair of sight openings provided in said front wall and adapted to expose related indicia on said movable member, said front wall being also provided with an elongated opening adapted to expose a series of indicia on said movable member, and a slide arranged between said movable member and said front wall, and adapted to indicate indicia on said movable member related to the indicia appearing in said first named sight openings.

2. In a device of the character described, a support including a wall, a rotatable dial mounted in rear of said wall, said dial being provided with radially extending series of indicia, sight openings provided in said front wall and extending radially of said disk, and a radially movable slide arranged between said dial and wall and adapted to indicate corresponding indicia of the radially extending series of indicia appearing at said sight openings.

3. In a device of the character described, a support including a wall, a rotatable dial mounted in rear of said wall, said dial being provided with radially extending series of indicia, each series being related to the diametrically opposite series, and said wall being provided with sight openings adapted to successively expose each of said related series of indicia, and a radially movable slide arranged between said dial and wall, said slide carrying a series of indicia and being movable to indicate related indicia of

the opposite radial series of said indicia on said dial exposed through said sight openings, and one of said openings being formed to indicate the indicium on said slide related to the indicated indicia on said dial.

4. In a device of the character described, a supporting wall, a movable member mounted in rear of said wall and carrying indicia, said indicia being exposed through openings provided in said wall, and a slide arranged between said wall and said movable member and carrying indicia, the indicia on said slide being exposed through one of said openings provided in said wall, said slide being movable to indicate related indicia on said slide and movable member.

In testimony whereof I hereby affix my signature.

FRANKLIN H. BIGELOW.