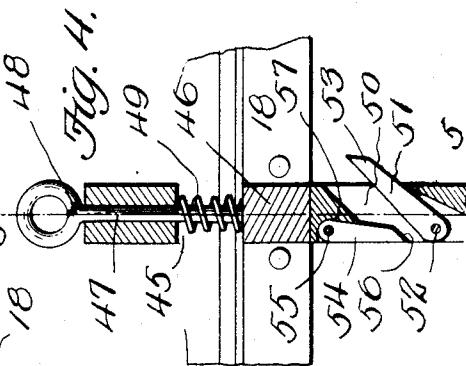
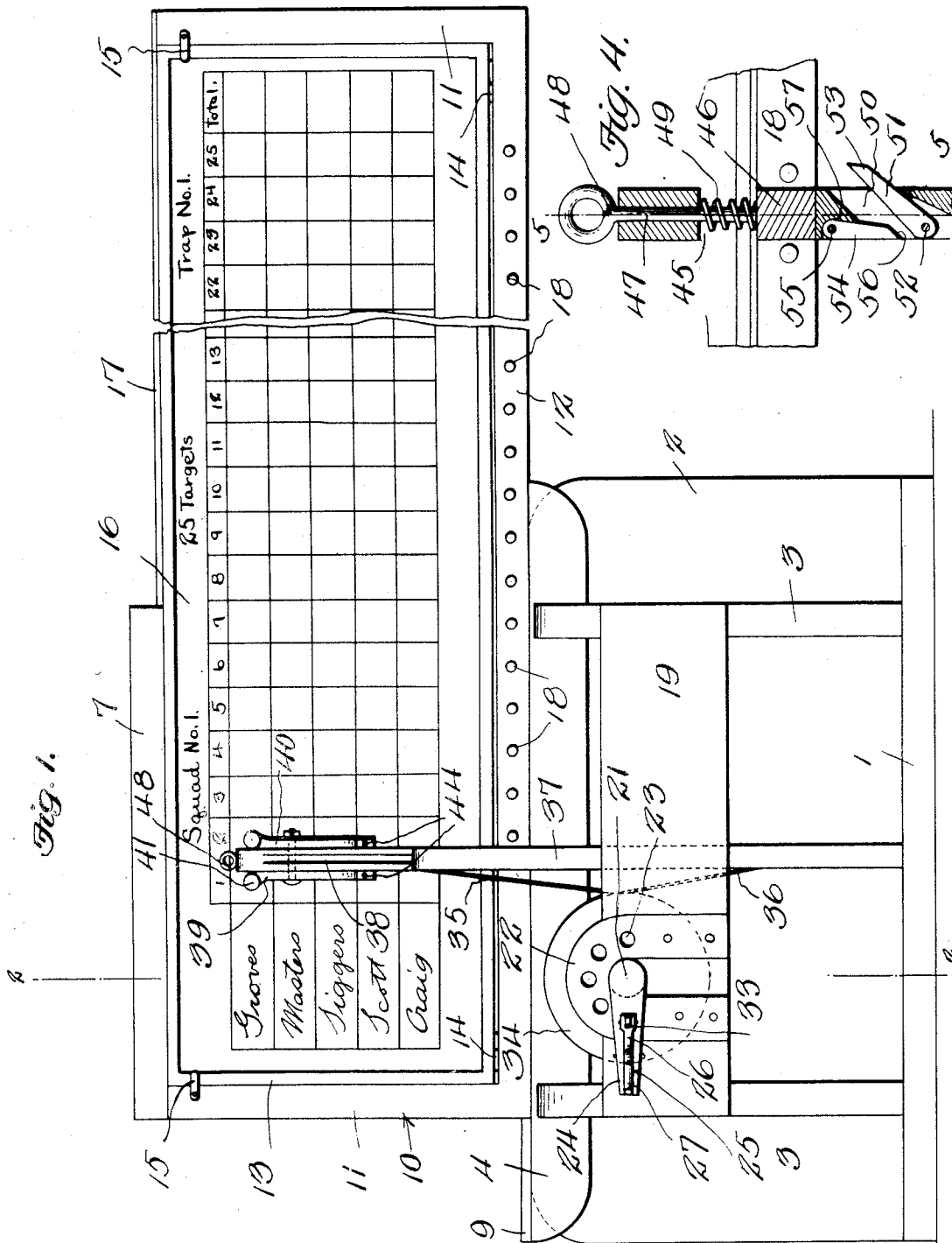


1,038,875.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.



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SCORE BOARD.

APPLICATION FILED NOV. 14, 1910.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 2.

1,038,875.

Fig. 3.

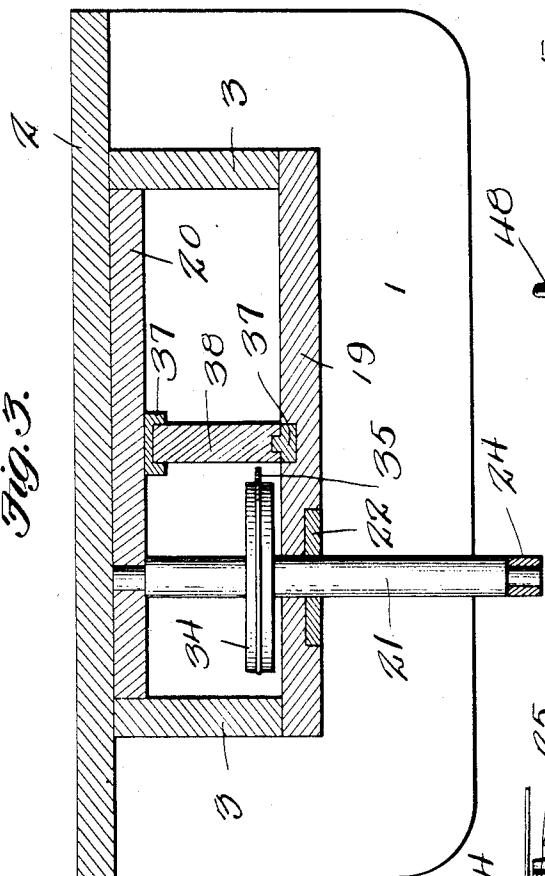


Fig. 5.

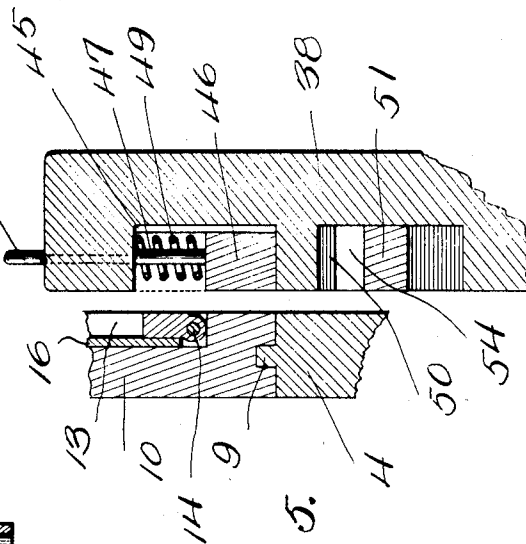
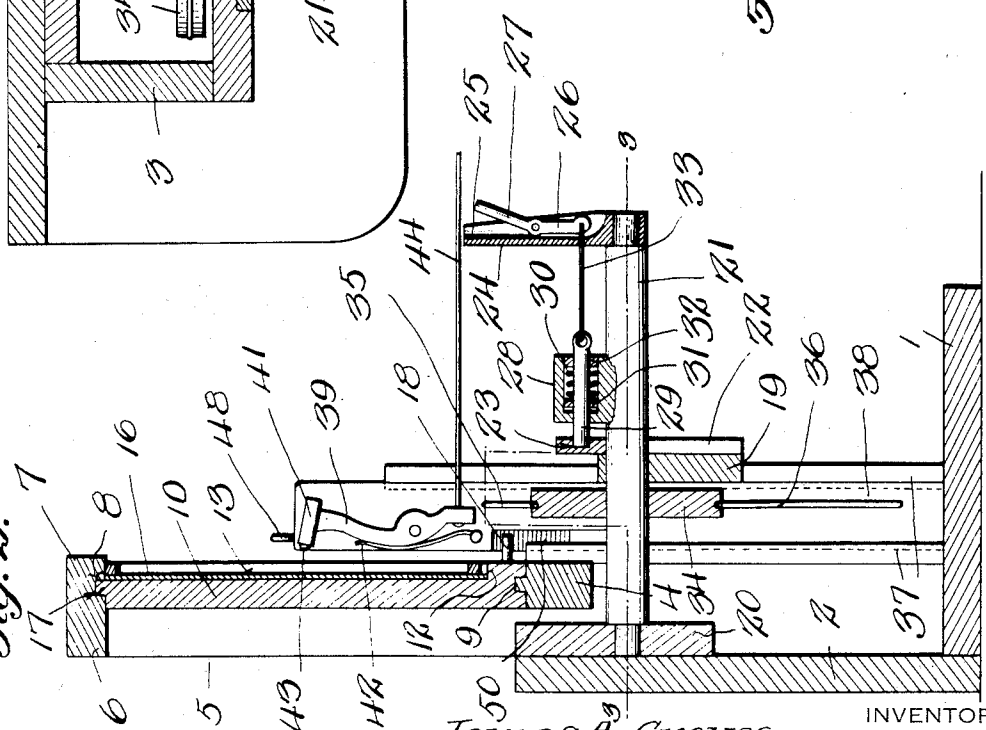


Fig. 2.



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SCORE-BOARD.

1,038,875.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed November 14, 1910. Serial No. 592,393.

To all whom it may concern:

Be it known that I, JAMES A. GROVES, a citizen of the United States, residing at Jacksonville, in the county of Morgan and State of Illinois, have invented a new and useful Score-Board, of which the following is a specification.

This invention has reference to improvements in score boards and is designed more particularly for indicating the results of a shooting tournament, whereby there may be produced upon the score sheet the results of the contest as the said contest progresses. For this purpose there is provided a score sheet holder with marking members in operative relation thereto capable of being brought into marking relation to the score sheet at the will of an operator, the marking devices being moved with relation to the score sheet as the contest progresses, so that proper indications may be marked on the sheet which latter will be automatically advanced as needed, and when the contest is ended the entire score will be visible to the contestants and others.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that the device shown in the drawings while capable of practical application, is susceptible of various modifications and changes in structure and arrangement of parts, without in any manner departing from the scope of the invention.

In the drawings:—Figure 1 is a front elevation of the score board. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a section of a portion of the marking mechanism with the marking devices omitted and drawn to a larger scale than the other figures. Fig. 5 is a section on the line 5—5 of Fig. 4.

Referring to the drawings there is shown a frame or support which may comprise a base member 1 and a back member 2, and on this supporting frame there are erected standards 3 in spaced relation one to the other, these standards supporting at their outer ends a track 4 and from the point where this track is supported on these standards they carry upstanding posts 5 joined at the top by a cross piece 6, with an overhang portion 7 in which is formed a longitudinal groove

8 matching a tongue 9 on the track member 4.

The groove 8 and tongue 9 form guiding supports for the respective edges of a score sheet holder 10 which may be in the form of a panel with border ledges 11, 12, so that the sheet holding face of the panel is counter-sunk below the edges of the border members. Within this counter-sunk portion there is lodged a frame 13 conforming to the counter-sunk portion of the score sheet holder, and this frame is connected to the ledge 12 by hinges 14 so that the frame may be readily turned on the hinges toward or from the counter-sunk face of the panel. Buttons 15 carried by the ledges 11 serve to lock the frame 13 in operative relation to the sheet holding face of the panel. The frame 13 holds by the edges a score sheet 16 in such manner that this score sheet may be introduced onto or removed from the panel at will. The score sheet holder or panel is capable of moving longitudinally between the track 4 and the overhang 7 of the bar 6, being guided by a tongue 17 on its upper edge fitting the groove 8 and by the tongue 9 on the track 4 entering a matching groove in the lower edge of the panel, and when desired the score sheet holder or panel may be entirely removed from the track members. The ledge 12 carries a longitudinal series of pins 18 in equidistant spaced relation for a purpose which will hereinafter appear.

Fast on the standards 3 below the track 4 is a cross piece 19 and extending through and journaled in this cross piece 19 and in another cross piece 20 fast to the frame member 2 is a crank shaft 21. Fast on the cross piece 19 in concentric relation to the crank shaft 21 is a socket plate 22 having produced therein a series of sockets 23 in concentric relation to the axis of the shaft 21. The shaft 21 carries at its outer end a crank handle 24, by means of which the shaft may be turned at will. In the particular structure shown the crank 24 is in the form of a radial arm with the outer face recessed, as indicated at 25, and in this recessed portion of the arm there is seated and pivoted to the arm a lever 26 suitably bent so that under normal conditions one arm 27 of the lever projects beyond the face of the crank or arm 24. The shaft 21 carries a hollow bracket 28 through which is passed a bolt 29 having guiding bearings in the bracket 28, and lodged in the bracket is a

spring 30 surrounding the bolt 29 between a collar 31 thereon and a head member 32 closing one end of the cavity within the bracket 27, the structure being such that the spring 30 tends to force the bolt 29 toward the plate 22, so that when the bolt is opposite any one of the cavities 23 it will move thereinto and thereby lock the shaft 21 against rotation. The other end of the bolt is connected by a strand 33 to the end of the lever 26 remote from the arm 27 of said lever. The structure and arrangement of the parts are such that when an operator grasps the handle 24 the hand will at the same time engage the arm 27 of the lever 26 and turn the same on its pivot support in the arm in a manner to move the bolt 29 against the action of the spring 30 to an extent to withdraw the bolt from the socket 23 in which it may be seated. This will cause the unlocking of the shaft 21 and it may now be moved about its longitudinal axis to the desired extent, which is usually from one socket 23 to the next when the shaft is turned in one direction, and from one end socket or any intermediate socket to the other end socket when the shaft is turned in the other direction, these movements being for a purpose which will presently appear.

Fast on the shaft 21 between the cross pieces 19 and 20 there is a drum 34 fast to which are strands 35, 36, respectively, these strands winding oppositely upon the drum, it being understood, however, that where the parts are suitably proportioned a single strand medially fastened on the drum may be used and then the strands 35 and 36 are simply the two ends of the single strand. For convenience of description, however, these strands 35, 36 will be separately designated.

At an intermediate point there are erected on the base member 1 two spaced guide strips 37, one being in part supported by the cross piece 19 and the other by the track member 4. These guides may be formed in any suitable manner and in the drawings one is shown as provided with a guiding tongue and the other with a guiding groove, but this particular structure is not mandatory. The guides support a bar 38 in a manner permitting the movement of the bar in the direction of its length between said guide strips. Attached to this bar near the upper end are two levers 39, 40, respectively, although under conditions which will hereinafter appear but one of these levers need be used. Each lever is formed at the upper end with a head 41 and is normally maintained in a predetermined position by a spring 42 carried by the bar 38 and bearing against the lever. Each head 41 carries an imprinting member 43 which may be of a type to produce any desired form of marking upon the sheet 16, a pad of suitable size

projecting slightly from the head 41 and a supply of suitable ink within the head in communication with the pad constituting efficient marking devices. The ends of each lever remote from the marking head has attached thereto a strand 44 which may lead to any convenient point of manipulation, so that an operator may, by operating the strand 44, move the lever 39 or 40 as the case may be against the action of its spring 42 to bring the marker 43 into engagement with the sheet 16.

The markings on the sheet 16 will depend upon the character of the score to be produced and these markings will therefore vary in accordance with the circumstances. In the particular showing of the drawings the sheet or score card is assumed to be that of squad No. 1 having five members, and the squad is to shoot at twenty-five targets from trap No. 1. Other score sheets or cards will be marked in accordance with the conditions they are to represent.

The strand 35 coming from the drum 34 is carried toward and fastened to the lower portion of the bar 38, while the strand 36 is carried to and fastened near the top of the bar 38, so that on turning the drum 34, the bar 38 will be elevated or lowered, as the case may be, and the spacing of the notches or sockets 23 is such that the movement of the drum 34 agreeable to the distance from one socket to the other will carry the heads 41 from a point opposite one of the names of the score card to the next one in order, the arrangement being such that a movement of the shaft 21 clockwise as viewed in Fig. 1 will cause a lowering of the bar 38 one space of the score card, and this lowering of the bar may be caused from time to time as necessary to carry the marker 43 in succession over the spaces of the score card agreeable to the several names shown thereon. For the lateral adjustment of the score card with relation to the marking members, another means is used.

The bar 38 is cut away on one edge as indicated at 45, and in this cut away portion there is lodged a block 46. The cut away portion 45 is longer than the block 46 in the direction of the length of the bar and consequently the block 46 may be moved longitudinally of the bar 38, a rod 47 extending through that portion of the bar 38 between the cut away portion 45 and the corresponding end of the bar being provided for this purpose, and this rod 47 may have formed at its outer end an eye 48, whereby it may be manipulated. That portion of the bar within the cut away portion 45 may be surrounded by a spring 49 between the block 46 and the end wall of the cut away portion remote from the block, the tendency of the spring 49 being to maintain the block 46 at one end of the cut away portion.

When the bar 38 is in its lowermost position, then that portion of the cut away part 45 normally occupied by the block 46 is in line with the pins 18, and the relation of the pins to the block 46 and bar 38 is such that these pins are on opposite sides of the block 46 and consequently under these conditions the panel 10 cannot be moved on its supports, but this movement is permitted when the operator lifts the block 46 out of the path of the pins 18 by a suitable manipulation of the rod 47, the spring 49 compressing for this purpose. Below the cut away portion 45 the bar 38 is traversed by another cut away portion 50.

Lodged within the cut away portion 50, the top and bottom walls of which may be inclined, is a pawl 51, of a length to extend across the cut away portion 50 and beyond one side of the bar 38, the pawl 51 being so located in the cut away portion 50 that it will assume such position by gravity, the lower end of the pawl being secured to the bar by a pivot pin 52, and the upper or free end of the pawl being beveled, as shown at 53, while the lower part of the cut away portion 50 is inclined to form a rest or seat for the pawl when in its extended position. When the bar 38 is raised, the projecting end of the pawl 51 will engage the pin 18 in its path and the panel 10 will be directed by the inclined pawl acting after the manner of a cam or wedge through the cut away portion 50 to the other side thereof. In the path of the pin is another pawl 54 normally pendent from a pivot pin 55 and having its lower end beveled, as shown at 56, the side of the bar 38 where the pawl 54 is lodged being recessed for the accommodation of this pawl, but the pawl is prevented from moving into the cut away portion 50 beyond a certain extent by a shoulder 57 against which it engages. As the pin 18 under the spring is directed through the cut away portion 50 by the pawl 51 it will engage the beveled end 56 of the pawl 54 and swing the same a short distance on its pivot 50. When, however, the pin 18 has reached the limit of its movement under the action of the pawl 51, the pawl 54 will drop back into its path and prevent the return movement of the pin and of the panel 10 therewith through the cut away portion 50. The pawls 51 and 54 become active only when the bar 38 is raised.

Let it be assumed that there is a squad of five and that they are to begin the contest. The bar 38 is raised to its highest point, if not already there, by a suitable manipulation of the shaft 21, and is locked at this highest point by the engagement of the bolt 29 in the proper terminal one of the sockets 23. The first member of the squad shoots and if the shot is successful the proper one of the levers 39 or 40 is manipulated to

cause a mark to appear in the proper position on the score card. Now the arm 24 is operated to turn the drum 34 until the bolt 29 engages the next one of the sockets 23, this resulting in dropping the bar 38 until the marking device is in the next lower position. If the second contestant is successful, the proper marking head is manipulated to cause a mark on the score card. If the second contestant misses, then the marking head is dropped to the next position without being manipulated, and a blank is left opposite the name of the second contestant. This procedure is continued until all the contestants have shot, whereupon the shaft 21 is turned in the reverse direction without regard to the sockets 23 until the first socket is again reached, this being agreeable to the uppermost position of the bar 38. This movement of the bar 38, however, has caused an engagement of the pawl 51 with a pin 18, and the actuation of the score card holder an appropriate distance to bring the marking head into engagement with the second column on the score card. The marking of the score may proceed as before, and the operations are repeated, so often as need be, throughout the contest, and the totals may then be indicated in any appropriate manner in the total column provided for the purpose. Now, to remove the complete score card the rod 47 is manipulated to carry the block 46 out of the path of the pin or pins 18 in the path of which the block still remains, and then the score card panel may be entirely removed from its support, the frame 13 may be released by the buttons 15, and the used score card may be removed and replaced by a fresh card, after which the panel may be reinserted in the machine and the scoring proceed as before.

Where the shooting is performed with double barrel guns both marking levers 39 and 40 may be employed, in which case the structure is so manipulated that the score card holder is movable two steps between each manipulation of the marking devices, this being easily accomplished by means of the shaft 21 which is operated twice instead of once after each production on the score card of the score marking.

In the operation of the device, the scoring machine is located in front of the firing line, while the person manipulating the scoring levers may be located back of the firing line, the strands 44 being long enough for the purpose. The liability of erroneous scoring is therefore guarded against since each contestant may see the score and if wrong may call attention thereto and have the same corrected.

What is claimed is:—

1. In a scoring device, a single scoring means, a holder for a record sheet, means for moving the scoring means at will with

reference to the sheet both actively and back to the initial position, and means for causing a movement of the sheet with reference to the scoring means by the return of the latter to initial position, the single scoring means being provided with means operable at will for causing a scoring indication to be produced upon the record sheet.

2. In a scoring device, a single scoring means, a plane, rectangular holder for a scoring sheet movable in the direction of its length in a right line, means for moving the scoring means with relation to the record sheet held in the holder to different extents at will in a direction at right angles to the movement of the record sheet, and means for moving the record sheet holder step by step in the direction of its length by the return of the scoring means to the initial position.

3. In a scoring device, a score sheet holder movable in one direction, a score marker having means whereby it may be operated at will, a carrier for the marker, means for moving the carrier at will step by step across a score sheet on the score sheet holder in a direction at right angles to the movement of the score sheet holder, and means both on the carrier for the marker and on the holder for the score sheet for moving the score sheet holder by the return movement of the marker carrier to initial position.

4. In a scoring device, a score card carrier, a support therefor along which the carrier is movable in the direction of its length, means on the carrier for holding the score card therein, a marker for designating scores on the score card, a carrier for the marker movable with relation to a score card on the carrier in the direction across the same, means for moving the marker carrier comprising a drum with strands connected thereto and to the carrier to move the same longitudinally in either direction, a shaft carrying the drum, a handle on the shaft, a latch mechanism carried by the shaft and handle, and a fixed holding member for the latch having a series of engaging means for the latch spaced in conformity with the markings of the score card.

5. In a scoring device, a score card carrier, a support therefor along which the carrier is movable in the direction of its length, means on the carrier for holding the score card therein, a marker for designating scores on the score card, a carrier for the marker movable with relation to a score card on the carrier in the direction across the same, means for moving the marker carrier comprising a drum with strands connected thereto and to the carrier to move the latter longitudinally in either direction, a shaft carrying the drum, a handle on the shaft, a latch mechanism carried by the shaft and handle, a fixed holding member for the latch

having a series of engaging means for the latch spaced in conformity with the markings of the score card, and means for moving the score card carrier in the direction of its length comprising a series of pins on the score card carrier in operative relation to the carrier for the marker, and a pawl on the carrier for the marker adapted to engage the pins on the carrier for the score card and move the latter when the carrier for the marker is moved toward the initial position.

6. In a scoring device, a score card carrier, a support therefor along which the carrier is movable in the direction of its length, means on the carrier for holding the score card therein, a marker for designating scores on the score card, a carrier for the marker movable with relation to the score card on the carrier in the direction across the same, means for moving the marker carrier comprising a drum with strands connected thereto and to the carrier to move the same longitudinally in either direction, a shaft carrying the drum, a handle on the shaft, a latch mechanism carried by the shaft and handle, a fixed holding member for the latch having a series of engaging means for the latch spaced in conformity with the markings of the score card, means for moving the score card carrier in the direction of its length comprising a series of pins on the score card carrier in operative relation to the carrier for the marker, pawls on the carrier for the marker adapted to engage the pins on the carrier for the score card and move the latter when the carrier for the marker is moved toward the initial position, and means for normally preventing movement of the score card carrier except by the marker carrier comprising a retaining block seated in the marker carrier, which latter is recessed for the passage of the pins on the score card carrier, said block being movable at will to a position out of the path of said pins.

7. In a scoring device, an elongated score card holder movable in the direction of its length, a marking means therefor provided with a pair of like marking devices in operative relation to separate points of a score card on the score card holder, and a carrier for the marking devices movable across the score card at right angles to the movement of the score card holder, the marking devices being separated one from the other in the direction of movement of the score card and at right angles to the direction of movement of the carrier for the marking devices.

8. In a scoring device, a score card carrier movable in one direction and provided with a series of spaced engaging means thereon, and a carrier having marking means thereon, said carrier being movable over a score card on the score card carrier in a direction at right angles to the movement of the lat-

ter, said marker carrier comprising a bar with edge recesses therein, one recess having pawls lodged therein in operative relation to the space engaging means of the score card carrier, and the other of the recesses having therein a movable block adapted to prevent movement of the score card carrier, said block having a spring for normally maintaining it in position, and a manipulating member whereby the block may be moved against the action of the spring out of the path of the space engaging members of the score card carrier.

9. In a scoring device, a movable carrier having score marking means thereon, means for moving said carrier comprising a drum with strands thereon connected at separated points to the carrier, a shaft carrying the drum, and a holding means for the shaft having a series of space locking positions.

10. In a scoring device, a holder for a record sheet movable in one direction in a right line, and a carrier having marking means thereon and movable in a right line in a di-

rection at right angles to the record sheet holder and in traversing relation to a record sheet when on the holder, the marker carrier having means for causing a step by step movement of the record sheet carrier.

11. In a scoring device, a record or scoring sheet holder movable in the direction of the length of the scoring sheet, a reciprocable carrier having marking means thereon, means for moving the reciprocable carrier in either direction at will, and actuating means on the marker carrier for the record sheet carrier inactive to the record sheet carrier on the active movement of the marker carrier, and active to the record sheet carrier on the inactive movement of the marker carrier.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES A. GROVES.

Witnesses:

FRANK P. VICKERY,
GEORGE F. GOEBEL.