

APPLICATION FILED NOV. 17, 1914.

3 SHEETS—SHEET 1.



J. R. Lewis
M. E. McCarthy



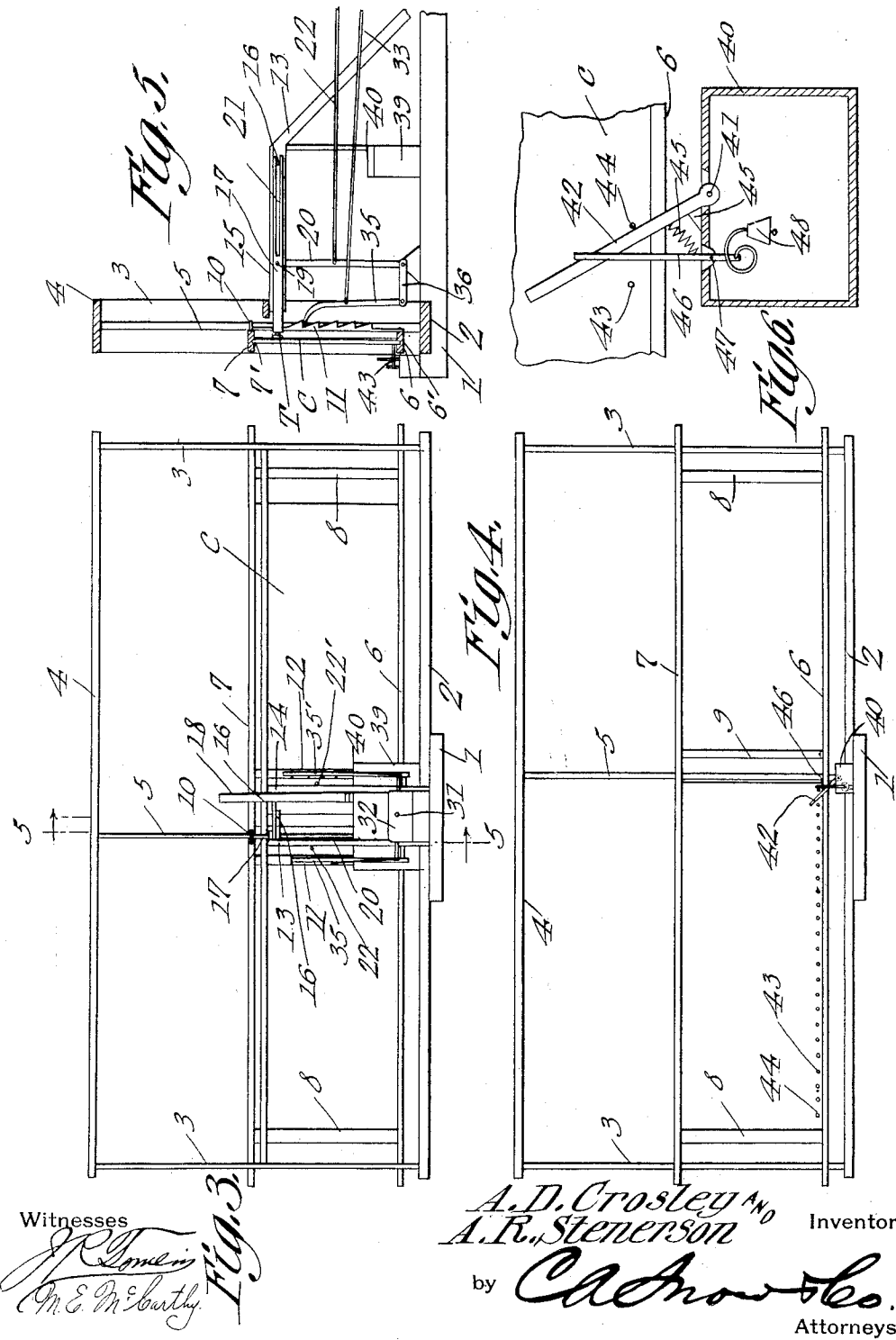
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A. D. CROSLLEY & A. R. STENERSON.
GUN CLUB SCORING MACHINE.
APPLICATION FILED NOV. 17, 1914.

1,141,618.

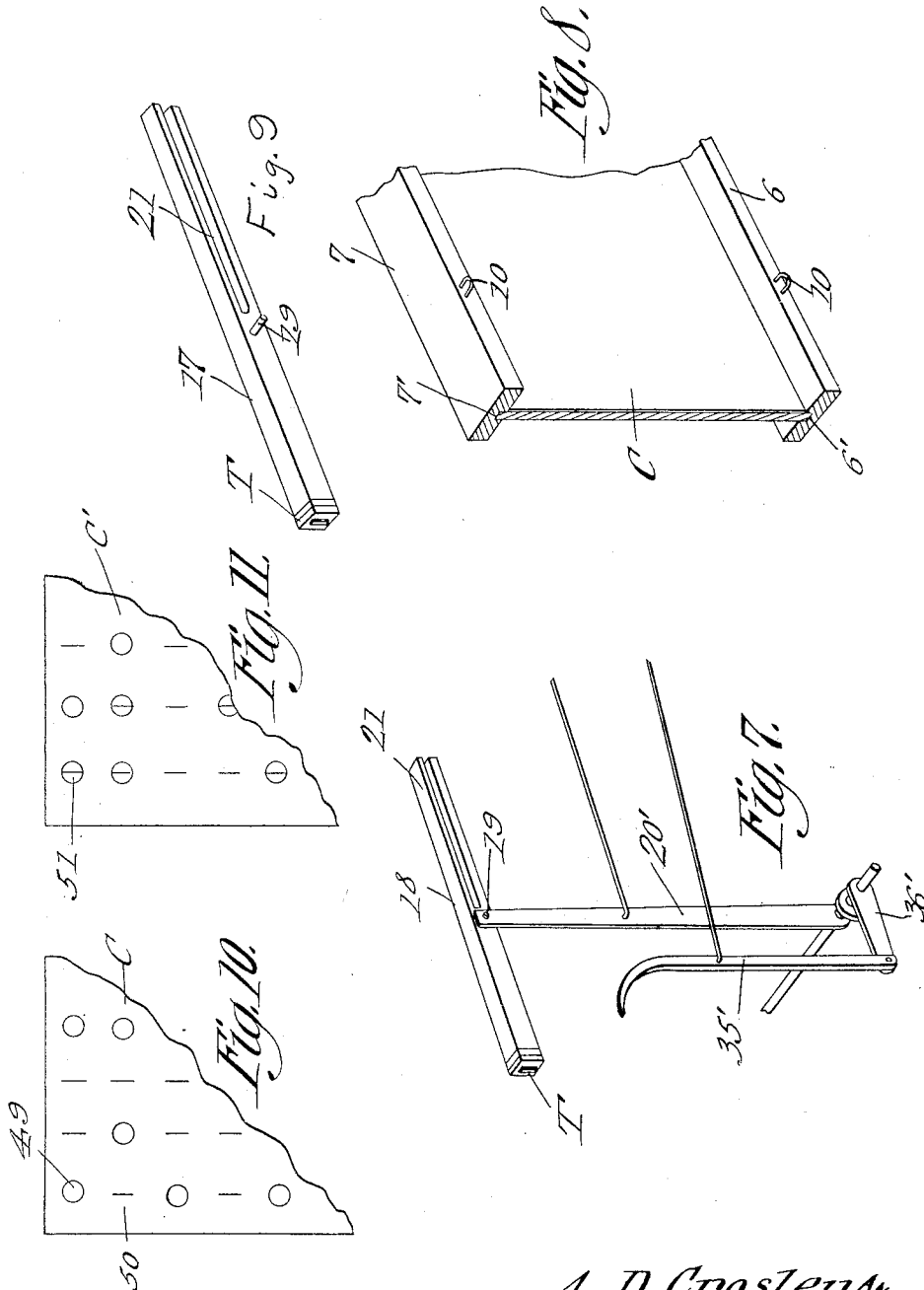
Patented June 1, 1915.
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT D. CROSLY AND ANDREW R. STENERSON, OF JEWELL, IOWA.

GUN-CLUB SCORING-MACHINE.

1,141,618.

Specification of Letters Patent.

Patented June 1, 1915.

Application filed November 17, 1914. Serial No. 872,607.

To all whom it may concern:

Be it known that we, ALBERT D. CROSLY and ANDREW R. STENERSON, citizens of the United States, residing at Jewell, in the county of Hamilton, State of Iowa, have invented a new and useful Gun-Club Scoring-Machine, of which the following is a specification.

The present invention relates to an improvement in a gun club scoring machine, one object of the invention, being the provision of a machine of this character, which is mechanically operated by the official scorer to place before the marksman and competitors, a visual score board in which the scores are printed upon the cards in such a position as to be recorded as soon after the firing of the shot as is possible and before the turn of the next competitor so that there can be no possibility of a dispute arising after the posting of the score.

A further object of the present invention, is the provision of a mechanism of this character, in which the card is mechanically moved vertically so that the competitors score will be arranged one below the other in serial relation, such card being automatically, at the end of the turn of the competitors, moved to the side one space to receive the next vertical row of score figures.

A still further object of the present invention, is the provision of a simple and practical device of this character, which may be readily installed in a visual position to be easily seen by the competing marksman, the same being either a portable device or one set permanently in the desired position.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings, Figure 1 is a side elevation with the frame partly in section showing the complete scoring machine. Fig. 2 is a top plan view of the complete machine. Fig. 3 is a front elevation of the complete machine taken from the operator's end thereof. Fig. 4 is a rear elevation of the machine. Fig. 5 is a section taken on line 5-5 of Fig. 3 of the card operating and

printing mechanism, one of the printing devices being in the position it assumes when registering a score. Fig. 6 is an enlarged detail sectional view of the means for operating the audible alarm and for shifting the card horizontally. Fig. 7 is an enlarged detail view of the type carrying member and the adjacent parts. Fig. 8 is an enlarged detail perspective view of a portion of the card support and the score card *per se*. Fig. 9 is a perspective view of one of the type carrying members *per se*. Fig. 10 is a score card for recording single shots. Fig. 11 is a score card for recording double shots.

Referring to the drawings, the numeral 1 designates the base which supports a frame composed of the two horizontal members 2 and 4 and the vertical members 3, there being interposed intermediate thereof, the cylindrical metallic rod 5, the purpose of which will presently appear.

Mounted for vertical movement relatively to the frame just described, is a card carrying frame which consists of the two parallel bars 6 and 7, which are held properly spaced by the vertical supports 8, and the intermediate support 9, there being disposed upon the front edge of the bars 6 and 7, the staples or guiding members 10, which surround the rod 5, so that the frame composed of the members 6, 7, 8 and 9 is properly supported adjacent the main frame for vertical sliding movement.

As clearly shown in Fig. 8, the bars 6 and 7 are grooved as at 6' and 7', for the slidable reception of the score card C, which is insertible at either end and is held in proper relation within such frame so as to be properly placed in type presentation position, as will presently appear.

Connected to the bars 6 and 7 intermediate of the ends thereof are the two parallel rack bars 11 and 12, the teeth of which project forwardly therefrom and constitute as will presently appear, means for assisting in the vertical movement of the card carrying frame so as to shift from one competitor's position to the next, and for the final release thereof when the card is moved in a horizontal position within the frame or the grooves 6' and 7'.

Mounted upon the base 1 and projecting in a position forwardly of the heretofore described apparatus, are the two frames 13 and 14, each one of which upon the inner face, as clearly illustrated in Fig. 5, is pro-

vided with the two parallel ribs 15, while interposed and connected to both of the frames 13 and 14 is a cylindrical rod 16.

Mounted for sliding movement between the grooves 15 of each frame 13 or 14, is its respective type carrying bar or member 17 or 18, there being two of these members which carry the type T upon the end thereof, one of the members being provided with a cipher or zero, while the other is provided with the figure 1. Each type bar 17 or 18, as clearly illustrated in Fig. 9, is slotted or bifurcated at 21, at one end thereof, beyond its operating pin 19, and such rod is adapted to fit astride of the rod 16, so that when the type bar is moved to the right to the position as shown in Fig. 5, the same may be permitted to fall and assume the position as shown by the bar 18 in Fig. 1, the type T thereof being placed in position upon the inking pad 40, which is supported upon a block or other support 39. This pad is of sufficient size to receive both of the type of the bars 17 and 18.

Connected to the respective pins 19 of the bars 17 and 18, are the operating levers 20 and 20', respectively, these rods being pivoted at their lower ends to the base 1, and having connected intermediate of their ends, the long rigid rods 22 and 22', which extend beyond the base 1 to engage the respective operating levers 23 and 23', which are pivoted at 24 to the base 25 of the casing 26, which constitutes a support for the operator's seat 28, so that the operator of the present mechanism may be seated thereupon and have the respective levers 23 and 23' in ready position for operation. The springs 37 and 37' are connected to the respective levers 23 and 23', to normally hold them in a position toward the seat 28 or with the type bars in the position that the type bar 18 assumes in Fig. 1. The respective levers 23 and 23' are guided in the slots 27 and 27' in the casing 26, thus permitting the free movement of the levers, yet at the same time protecting the mechanism within the casing.

A lever 29 is pivoted upon the base 25 within the casing 26 and is movable through the slot 30 in the top thereof so as to be in ready access to the operator, there being connected to the same intermediate of its ends and extending forwardly, the rigid rod 31, which is guided through the support or guide 32 carried by the base 1 and is in turn connected at its end adjacent the scoring mechanism to the two fixed rods 33 and 33', which in turn are held toward the scoring mechanism by means of the spring 34. The opposite ends of the links or rods 33 and 33' are connected to the respective pawls 35 and 35' upon the short links 36 and 36' which in turn are pivoted to the base 1. The free ends of the pawls 35 and 35' are disposed in coöperative positions to the rack bars 11

and 12, one to each thereof, so that as the lever 30 is operated, both pawls 35 and 35' controlled thereby, will be released and the frame controlled by the pawls and toothed bars 11 and 12 will fall by gravity to its lowermost or reset position.

Pivoted to the top of the casing 26 at 38, is a double lever 39, the free ends of which are disposed to be placed above the rear ends of the slots 27 and 27' in the path of the respective levers 23 and 23' to be operated upon during the spring actuated movement of such levers to in turn insure the engagement of the pawls 35 and 35' with the proper tooth of the bar 11—12, and hold the frame and card in elevated position.

The mechanism for causing the cards C to be moved horizontally, clearly shown in Figs. 4 and 6, includes a casing 40 in which is pivoted at 41, the arm 42, which is limited in its inclined movement by the rod 45, and is there held by means of the spring 45'. This arm 42 is adapted to ride between the short pins 43 and the long pins 44, carried upon and projecting from the rear of the card C. It will thus be seen that as the frame carrying the card C is elevated that, as for instance in Fig. 6, the pin 43 will ride against the inclined face of the arm 42 and pass thereabove, so that when the operator pulls upon the lever 29, to in turn release the two pawls 35 and 35', and the frame carrying the card to gravity, that the next pin 43 will then ride down upon the opposite side of the arm 42, and move the card C to the right the distance between the respective short pins 43 or one pin 43 and the longer pin 44. The long pins 44 are provided, in addition, to cause with the arm 42, the proper sliding movement to the card C, to also actuate the audible alarm 48, which is an alarm to notify the competitors that it is time to shift positions in shooting, as is the custom in trap shooting. A lever 46 is pivoted in the casing 40 at 47, and has its upper free end disposed in the path of to be engaged by the long pins 44, the same being out of the path of the shorter pins 43, so that as shown in Fig. 1 it will be operated every third movement to the right of the card C so that the bell 48 will be actuated every third stop.

It will be noted that the respective frames 13 and 14, have their inner ends converging toward a common type presentation point, as illustrated in Fig. 2, so that the cipher or numeral 1 upon the respective bars 17 and 18 will be guided thereat to cause the printing as illustrated on the cards C and C' in Figs. 10 and 11 respectively.

Where the competitors only shoot one at each turn, the card C is used, the upper row 49 indicating that the competitor No. 1 missed on the first shot, hit the second and third, and missed on the fourth, while at 50 130

the second competitor shows that he hit the first and third shots and missed the second and fourth. Where the competitors are permitted to shoot twice as from a double bar-
 5 relled shot gun, a card C' shows the score, indicating at 51 that the first two shots of the competitor No. 1 was a hit and a miss, as the numeral 1 and cipher are presented in the same position, the second indicating
 10 that he missed both shots, while the third indicates that both shots were hits.

From the foregoing description, taken in connection with the drawings, the operation of the present device is readily understood, but briefly stated it is as follows: Assuming
 15 that a number of competitors are shooting one shot at a time, the present scoring machine is placed so that the card C is visible to all competitors with the operator seated at 28, a distance behind the competitors. Upon the firing of the shot of the first competitor, should the device be registered a miss, the operator will move the lever 23
 20 forwardly against the action of its spring 37', thus pushing the rod 22' forwardly and the lever 20' so that the type bar 18 is moved from the position as shown in Fig. 1 to the position of the type bar 17 shown in such figure, this action being due to the elevation
 25 of the bar and the coöperation of the slot 20 and the rod 16 which causes the type T to be swung from the pad engaging position to a position at right angles thereto, the continued movement of the lever 20' causing
 30 the type to be moved in a straight line to thus present the type upon the card C. The score thus indicated upon the card would be the cipher at 49 in Fig. 10. The operator releasing the lever 23' to its spring 37' will
 35 permit the type bar 18 to assume the full line position as shown in Fig. 1 to a retrograde or retractive movement to actuate the links 36' and consequently the pawl 35' moving the same upwardly so that the rack
 40 bar 12 is engaged and moves the frame carrying the card C upwardly one space to place the row 50 in type presentation position. When the card C has been moved upwardly and the last competitor has been
 45 scored, the lever 30 is moved to in turn release both pawls 35 and 35', and permit the frame carrying the card to fall by gravity, the next pin 43 or 44 engaging the arm 42 upon the upper inclined face thereof and
 50 slide the card C so as to present the second vertical row in type presentation position to receive the type when scoring the second turn. When the third turn has arrived, the card C when being moved horizontally will
 55 cause one of the pins 44 to engage the operating lever 46, to actuate the bell 48 and thus signal the competitors to change positions for the next shot.

What is claimed is:

65 1. A scoring machine, including a sup-

porting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal
 70 movement, a type bar mounted for movement to and from the card, means for operating the type bar, means actuated thereby for imparting step-by-step vertical movement to the card carrying frame, and co-
 75 operable means carried by the card and the card carrying frame to impart step-by-step horizontal movement to the card as the card carrying frame is moved to lowermost position.

2. A scoring machine, including a sup-
 80 porting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, a type bar mounted for move-
 85 ment to and from the card, means for operating the type bar, means actuated thereby for imparting a step-by-step vertical movement to the card carrying frame, coöperable means carried by the card and the card carrying
 90 frame to impart step-by-step horizontal movement to the card as the card carrying frame is moved to lowermost position, and manually controlled means for releasing the means for imparting step-by-step vertical
 95 movement to the card carrying frame to permit the frame to fall by gravity and cause the operating of the coöperable means.

3. A scoring machine, including a sup-
 100 porting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, two type bars mounted for move-
 105 ment to and from the card, means for guiding the bars to the same type presentation position upon the card, separate means for operating each type bar, separate means actuated by each type bar operating mechanism for imparting step-by-step vertical
 110 movement to the card carrying frame, one of the latter means when inactive acting as a retrograde movement preventing means to hold the card carrying frame against falling, and coöperable means carried by the
 115 card and the card carrying frame to impart step-by-step horizontal straight line movement to the card as the card carrying frame is moved to its lowermost position.

4. A scoring machine, including a sup-
 120 porting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, two type bars mounted for move-
 125 ment to and from the card, means for guiding the bars to the same type presentation position upon the card, separate means for operating each type bar, separate means actuated by each type bar operating mecha-
 130

nism for imparting step-by-step vertical movement to the card carrying frame, one of the latter means when inactive operating as a retrograde movement preventing means to hold the card carrying frame against falling, manually controlled means for releasing both of the means that actuate the card carrying frame to permit the card carrying frame to fall by gravity, and coöperable means carried by the card and the card carrying frame to impart a step-by-step horizontal movement to the card as the card carrying frame lowers.

5. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, a type bar mounted for movement to and from the card, means for operating the type bar, means actuated thereby for imparting step-by-step vertical movement to the card carrying frame, coöperable means carried by the card and the card carrying frame to impart step-by-step horizontal movement to the card as the card carrying frame is moved to lowermost position, and an audible alarm actuated as the horizontal movement is imparted to the card.

6. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, a type bar mounted for movement to and from the card, means for operating the type bar, means actuated thereby for imparting a step-by-step vertical movement to the card carrying frame, coöperable means carried by the card and the card carrying frame to impart step-by-step horizontal movement to the card as the card carrying frame is moved to lowermost position, manually controlled means for releasing the means for imparting step-by-step vertical movement to the card carrying frame to permit the frame to fall by gravity and cause the operating of the coöperable means, and an audible alarm actuated as the horizontal movement is imparted to the card.

7. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, two type bars mounted for movement to and from the card, means for guiding the bars to the same type presentation position upon the card, separate means for operating each type bar, separate means actuated by each type bar operating mechanism for imparting step-by-step vertical movement to the card carrying frame, one of

the latter means when inactive operating as a retrograde movement preventing means to hold the card carrying frame against falling, coöperable means carried by the card and the card carrying frame to impart step-by-step horizontal straight line movement to the card as the card carrying frame is moved to its lowermost position, and an audible alarm actuated as the horizontal movement is imparted to the card.

8. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a card mounted in the latter frame for straight line horizontal movement, two type bars mounted for movement to and from the card, means for guiding the bars to the same type presentation position upon the card, separate means for operating each type bar, separate means actuated by each type bar operating mechanism for imparting step-by-step vertical movement to the card carrying frame, one of the latter means when inactive operating as a retrograde movement preventing means to hold the card carrying frame against falling, manually controlled means for releasing both of the means that actuate the card carrying frame to permit the card carrying frame to fall by gravity, coöperable means carried by the card and the card carrying frame to impart a step-by-step horizontal movement to the card as the card carrying frame lowers, and an audible alarm actuated as the horizontal movement is imparted to the card.

9. A scoring machine having a movable scoring card, and printing mechanism to print the visual score thereupon, including a type bar, a type bar guide, a rod carried by said guide, said type bar being provided with a slotted end that fits astride said rod, whereby the rod forms the sole fulcrum for the bar, a type carried upon the opposite end thereof, an inking pad disposed at right angles to the card and below the rod, and means for swinging the type bar upon the rod as a fulcrum to cause the type to rest upon the ink pad or to engage the card at type presentation point.

10. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a score receiving card mounted in the latter frame, a type bar mounted for movement to and from the score card, a rock shaft, a lever connected to the rock shaft at one end and to the opposite end to the type bar, a rock bar carried by the card carrying frame, a pivoted pawl connected to the rock shaft with its free end disposed to engage the rack bar, and means connected to the lever for operating the same, the movement of the lever to place the type bar in type presentation position lowering the

pawl, and the movement in the opposite direction causing the pawl to engage the rack bar to impart a step-by-step movement to the card carrying frame.

5 11. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a score receiving card mounted in the latter frame for straight
10 line horizontal movement, a type bar mounted for movement to and from the score card, a rock shaft, a lever connected to the rock shaft at one end and to the opposite end to the type bar, a rack bar carried by the card
15 carrying frame, a pivoted pawl connected to the rock shaft with its free end disposed to engage the rack bar, means connected to the lever for operating the same, the movement of the lever to place the type bar in
20 type presentation position lowering the pawl, while the movement in the opposite direction causes the pawl to engage the rack bar to impart a step-by-step movement to the card carrying frame, and coöperable means
25 carried by the score card and the card carrying frame whereby upon the release of the pawl and the lowering of the card carrying frame, a step-by-step straight line horizontal movement is imparted to the score card
30 within the frame.

12. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a score receiving card
35 mounted in the latter frame for straight line horizontal movement, a type bar mounted for movement to and from the score card, a rock shaft, a lever connected to the rock shaft at one end and to the opposite
40 end to the type bar, a rack bar carried by the card carrying frame, a pivoted pawl connected to the rock shaft with its free end disposed to engage the rack bar, means connected to the lever for operating the same, the movement of the lever to place the type
45 bar in type presentation position lowering the pawl, while the movement in the opposite direction causes the pawl to engage the rack bar to impart a step-by-step movement to the card carrying frame, manually controlled means for releasing the pawl to permit the card carrying frame to fall by gravity, and coöperable means carried by the score card and the card carrying frame, whereby as the card carrying frame is released by gravity a step-by-step horizontal straight line movement is imparted to the score card.

13. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line vertical movement, a score receiving card mounted in the latter frame for straight line horizontal movement, a type bar mounted
60 for movement to and from the score card,

a rock shaft, a lever connected to the rock shaft at one end and to the opposite end to the type bar, a rack bar carried by the card carrying frame, a pivoted pawl connected to the rock shaft with its free end disposed
70 to engage the rack bar, means connected to the lever for operating the same, the movement of the lever to place the type bar in type presentation position lowering the pawl, while the movement in the opposite
75 direction causes the pawl to engage the rack bar to impart a step-by-step movement to the card carrying frame, coöperable means carried by the score card and the card carrying frame whereby upon the release of
80 the pawl and the lowering of the card carrying frame, a step-by-step straight line horizontal movement is imparted to the score card within the frame, and an audible alarm disposed in the path of the coöperable means
85 carried by the score card, whereby the same is actuated as a step-by-step movement is imparted thereto.

14. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line
90 vertical movement, a card mounted in the latter frame, two type bars mounted for movement to and from the card, means for carrying both type bars to the same type
95 presentation point upon the card, spring actuated means for imparting reciprocatory movement to each type bar, two coöperative means carried by the card carrying frame and operably connected to the type bar actuating means to impart step-by-step vertical movement to the card carrying frame upon the movement of the type bar, one of the latter means holding the card carrying frame against rolling movement, while the
105 other means is moving the same vertically, and means controlled by the manually and spring operated means upon the retractive movement of one of the latter for actuating one of the coöperating elevating means into
110 engaging position.

15. A scoring machine, including a supporting frame, a card carrying frame carried thereby and mounted for straight line
115 vertical movement, a card mounted in the latter frame, two type bars mounted for movement to and from the card, means for carrying both type bars to the same type presentation point upon the card, spring actuated means for imparting reciprocatory
120 movement to each type bar, two coöperative means carried by the card carrying frame and operably connected to the type bar actuating means to impart step-by-step vertical movement to the card carrying frame upon the retractive movement of the type bar, one of the latter means holding the card carrying frame against rolling movement while the other means is moving the same vertically, means controlled by the man-
125 130

ually spring operated means upon the re-
tractive movement of one of the latter for
actuating one of the coöperating elevating
means into engaging position, and manually
5 controlled means for releasing both of the
elevating means to permit the lowering of
the card carrying frame.

16. A scoring machine, including a sup-
porting frame, a card carrying frame car-
ried thereby and mounted for straight line
vertical movement, a card mounted in the
latter frame, two type bars mounted for
movement to and from the card, means for
carrying both type bars to the same type
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movement to each type bar, two coöperative
means carried by the card carrying frame
and operably connected to the type bar ac-
20 tuating means to impart step-by-step ver-
tical movement to the card carrying frame
upon the retractive movement of the type
bar, one of the latter means holding the card
carrying frame against rolling movement

while the other means is moving the same 25
vertically, means controlled by the man-
ually spring operated means upon the re-
tractive movement of one of the latter for
actuating one of the coöperating elevating
means into engaging position, manually con- 30
trolled means for releasing both of the ele-
vating means to permit the lowering of the
card carrying frame, said score card being
mounted for straight line horizontal move-
ment within the card carrying frame, and 35
coöperative means carried thereby and set
in operation as the frame is released to grav-
ity to impart step-by-step horizontal move-
ment to the score card.

In testimony that we claim the foregoing 40
as our own, we have hereto affixed our sig-
natures in the presence of two witnesses.

ALBERT D. CROSLEY.
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Witnesses:

ALPHEUS ALEXANDER,
H. C. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."