

E. N. JOHNSTON.  
RIFLEMAN'S SCORE SHEET.  
APPLICATION FILED SEPT. 2, 1908.

917,732.

Patented Apr. 6, 1909.

Fig. 1.

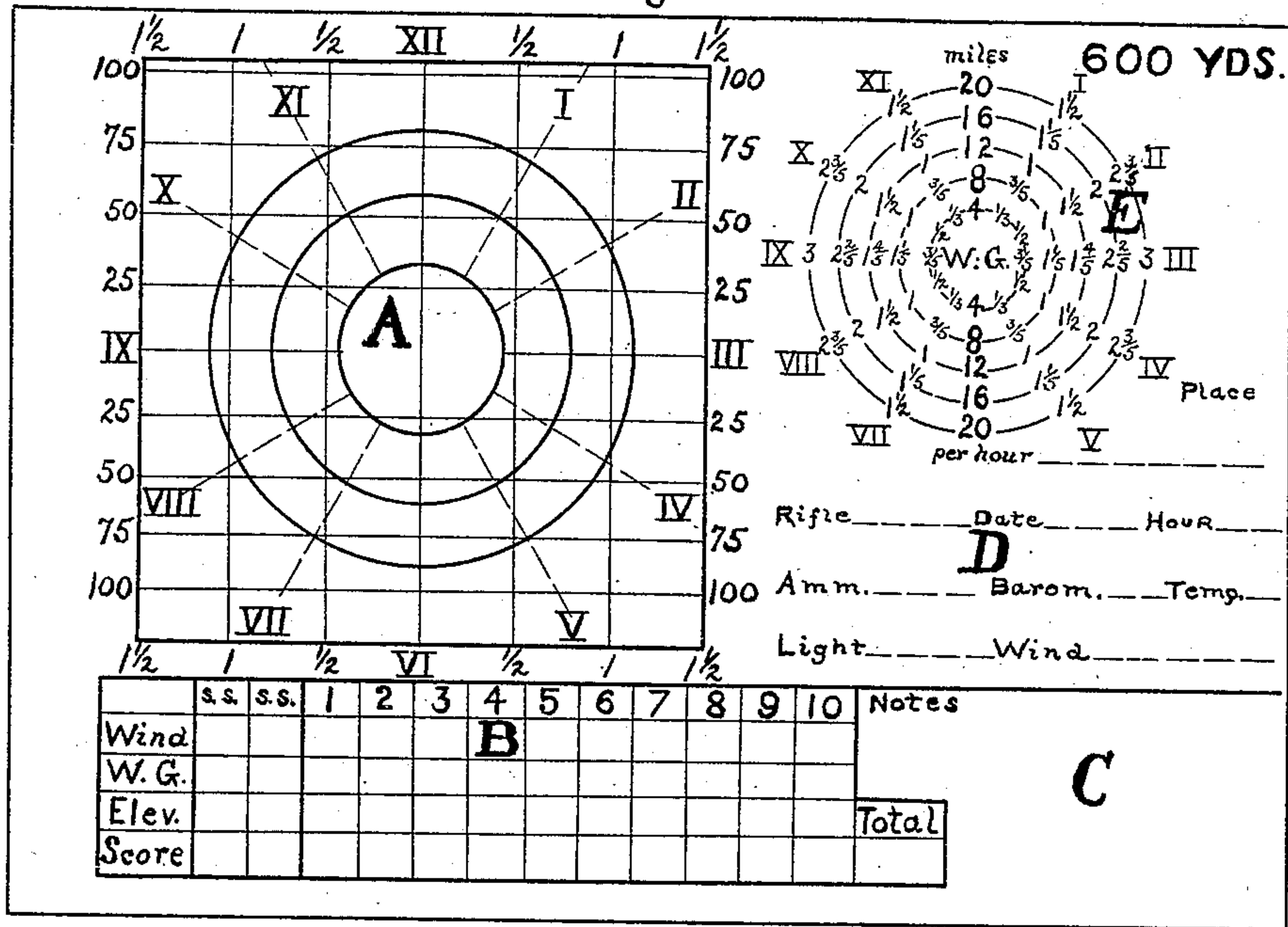
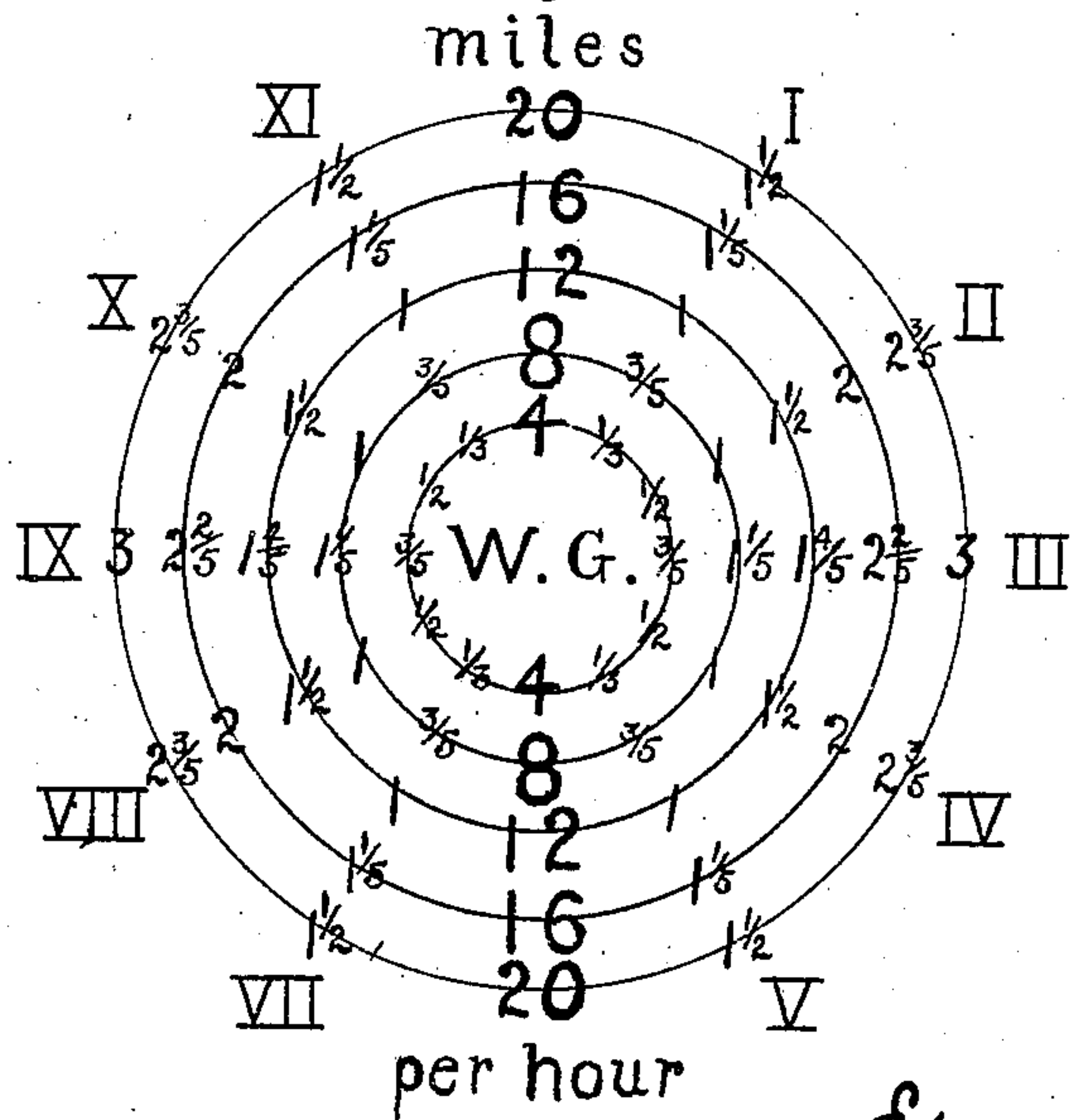


Fig. 2



WITNESSES:  
*Harold C. Fiske*  
*[Signature]*

*Edward Neale Johnston*  
INVENTOR.



# UNITED STATES PATENT OFFICE.

EDWARD NEELE JOHNSTON, OF THE UNITED STATES ARMY.

## RIFLEMAN'S SCORE-SHEET.

No. 917,732.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed September 2, 1908. Serial No. 451,326.

*To all whom it may concern:*

Be it known that I, EDWARD NEELE JOHNSTON, an officer of the U. S. Army, and a citizen of the United States, have invented certain new and useful Improvements in Rifle-  
men's Score-Sheets, of which the following is a specification, due reference being had to the drawing accompanying, which I mean shall be considered as a part of the same.

My invention relates to an improvement in score-sheets of the kind used by riflemen in keeping a systematic record of the results of their shooting in target-practice, with a record of the various conditions affecting the shooting, such as wind, light, temperature, etc., and a record of the setting of the rifle-sight during the shooting. To assist the rifleman in keeping records as indicated above, various types of score-sheets have been made for use of the members of the United States Army and other riflemen; these sheets are used singly or bound together in some convenient form.

Whenever during rifle-shooting there is any wind blowing from any direction except either straight from the target or straight away from it, it is necessary for the rifleman to ascertain what lateral deflection of the rifle-sight should be used to compensate for the action of the wind in making the bullet deviate either to the right or to the left from a straight course toward the target.

It is the purpose of the present invention to provide a means whereby the rifleman can ascertain at a glance the proper lateral windage correction to use when shooting in a wind of a given direction and velocity, and to place this windage device in a convenient place on the rifleman's score-sheet itself, where it is constantly visible to the rifleman during his shooting. The means whereby I attain said purposes will be evident from the description which I shall now proceed to give, and from the accompanying drawing.

Figure 1 is a plan view of the entire score-sheet, showing the windage-device in combination with the ordinary features of rifle-  
men's score-sheets. Fig. 2 is a detail plan of the windage device alone.

In Fig. 1 in the upper left-hand corner of the score-sheet is a representation of a rectangular target intended to be used in plotting the location of hits on the target and for indicating the changes of sight-settings required in order that subsequent shots may hit the target.

In the lower portion of the sheet is a space, B, arranged for keeping a record of the score and the setting of the sight for the different shots fired. In the lower right-hand corner of the sheet is a space, C, intended to be used for any notes for which space is not provided elsewhere on the sheet. Just above the space C, is a space D, arranged for keeping a record of the time, weather conditions, etc.

In the upper right hand corner of the sheet is the windage device, E. It will be observed that this device contains a series of concentric circles and that at points where these circles are intersected by imaginary lines from the center toward the hour points of a clock-face are various numbers. It is customary for riflemen to express the direction of the wind by a clock-face notation, the clock-face being supposed to be held in the hand with the hour XII toward the target and the hour III at the right-hand. A wind blowing directly from the target is called a XII o'clock wind; one blowing from the left a IX o'clock wind, etc. The rear sight of a rifle is generally so arranged as to permit of a lateral movement of the sight to compensate for the deviating tendency of the wind. The rifle-sights are generally graduated in "points" for this lateral movement by lines spaced at equal distances apart. In the windage-device herein described the numbers in the line VI—XII represent the velocity of the wind in miles per hour. The numbers on any one circle represent the lateral correction in "points" and fractions of points of the wind-gage required to compensate for the deviating components of winds having the velocity marked on that particular circle where it crosses the line VI—XII, and having the particular direction which corresponds to the radiating line on which the windage correction is found. It is to be particularly observed that the windage corrections for winds blowing from any direction of the clock are to be found in a corresponding direction on the windage indicator. This greatly facilitates the determination of the proper correction.

The following will serve to illustrate the use of the windage-device: Before a rifleman commences to fire at any range he ascertains the velocity of the wind from an anemometer and its direction from a clock-face indicator on the target range; or else he estimates the velocity and direction by observing the movements of trees, flags, etc.



Suppose that he is going to fire at the 600 yard range and that he finds the velocity of the wind to be 20 miles per hour and that its direction is from III o'clock. A glance at the windage-device on his score-sheet shows him instantly that he should use a lateral correction of 3 points. Suppose, now, that after he has fired a few shots the wind decreases in velocity to 16 miles per hour; another glance tells him that he should decrease the lateral correction to  $2 \frac{2}{5}$  points. Suppose, now, that the wind changes in direction and blows from V o'clock. The windage device tells the rifleman at once that he should decrease the deflection to  $1 \frac{1}{5}$  points. As the windage device is constantly in front of the rifleman during all of his firing he is enabled to ascertain instantly whether a certain change in the wind velocity or direction is enough to call for any change in the sight-setting and the amount of the change required.

While the invention has been described as an improvement in riflemen's score-sheets it is to be understood that the windage device may be used also on score-cards or independently merely as an aid to the proper adjustment of the sight.

The device has been shown in the figure as arranged for firing at the 600 yard range, but it is to be understood that the same device is intended for use at all the other ranges at which firing is held, the sole difference being in the numbers representing the windage corrections.

I do not wish to be understood as limiting myself to the particular number of velocity circles shown in the figures, nor to the particular numbers shown either as representing the velocity of the wind or as representing the windage corrections.

While the drawing shows a particular arrangement on the score sheet of the different component parts specifically described herein, I do not wish to be understood as limiting my invention to the particular arrangement of parts shown and described, it being well understood that the various component parts may be otherwise placed on the score sheet.

While the drawing shows the windage device as a collection of complete and concentric circles, etc., it is to be understood that the same information which is obtainable from the windage device as shown and described may be obtained, though not so conveniently, from a portion of the device containing parts only of the circles, the corrections for I, V, VII, XI o'clock, II, IV, VIII, X o'clock, and III, IX o'clock being numerically the same, and it is to be understood that such an arrangement is contemplated for use in cases where it is essential or advisable to economize space on the score sheet.

It is also to be understood that while the

circles or parts of circles mentioned herein and shown in the drawing are of great assistance in quickly ascertaining the windage correction corresponding to a particular velocity of the wind, a series of lines forming either chords or arcs of circles may be used, or the circles may be entirely imaginary, all corrections corresponding to a particular velocity of the wind, being arranged approximately on the circumference of an imaginary circle.

I wish it also to be understood that although the windage device is shown in the drawing in combination with a representation of a rectangular target, such as is used during what is called "slow fire" in target practice, the device may also be used in combination with a representation of any kind of target at which firing is held on a target range, and such a combination is contemplated herein.

What I claim as new and patentable is:—

1. A windage indicator consisting of a series of concentric circles each corresponding to a certain velocity of the wind and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number representing the lateral correction required to correct for the deviating component of a wind having the velocity indicated on the circle on which the number is located and having the direction indicated by the hour designation of the radiating line on which the number is located, all substantially as set forth.

2. The combination in a rifleman's score-sheet or score-card of a target representation; a space for recording data of time, weather conditions, etc.; a space for recording the score; a space for recording miscellaneous notes; and a windage device consisting of a series of concentric circles each corresponding to a certain velocity of the wind and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number representing the lateral correction required to compensate for the deviating component of a wind having the velocity indicated on the circle on which the number is located and having the direction indicated by the radiating clock-line on which the number is also located, all substantially as described.

3. A windage indicator consisting of a series of concentric circles each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points of the wind-gage required to correct for the deviating component of a wind having the velocity indicated



on the circle on which the number is located, and having the direction indicated by the hour designation of the radiating line on which the number is located, all substantially as set forth.

4. The combination in a rifleman's score-sheet or score-card of a target representation, a space for recording data of time, weather conditions, etc.; a space for recording the score; a space for recording miscellaneous notes; and a windage device consisting of a series of concentric circles each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of a clock-face, each number being the correction in points and fractions of points of the wind-gage required to compensate for the deviating component of a wind having the velocity indicated on the circle on which the number is located, and having the direction indicated by the radiating clock-line on which the number is also located, substantially as set forth.

5. A windage indicator consisting of a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the designation of the radiating line on which the number is located, substantially as set forth.

6. A windage correction indicating device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number being the correction in points and fractions of points of the wind-gage required to compensate for the deviating component of a wind having a certain velocity and a direction indicated by the designation of the radiating line on which the number is located, substantially as set forth.

7. The combination in a rifleman's correction chart of a target representation, and a circular windage indicating device, substantially as set forth.

8. The combination in a rifleman's correction chart of a target representation, and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number representing the lateral correction required to compensate for the deviating component of a wind having the velocity indicated on the circle on which the number is located, and having the direction indicated by the radiating clock-line on which the number is also located, substantially as set forth.

9. The combination in a rifleman's correc-

tion chart of a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the correction in points and fractions of points of the wind-gage required to correct for the deviating component of a wind having a velocity corresponding to the circle on which the number is located, and having a direction indicated by the radiating line on which the number is also located, substantially as set forth.

10. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording data of time, weather conditions, etc., substantially as set forth.

11. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the radiating line on which the number is located, with a form for recording data of time, weather conditions, etc., substantially as set forth.

12. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording data of time, weather conditions, etc., substantially as set forth.

13. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording the result of shots fired during target practice, substantially as set forth.

14. The combination of a rifleman's correction chart containing a target representation and windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the radiating line on which



the number is located, with a form for recording the result of shots fired during target practice, substantially as set forth.

15. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording the result of shots fired during target practice, substantially as set forth.

16. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording miscellaneous notes, substantially as set forth.

17. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity, and a direction indicated by the radiating line on which the number is located, with a form for recording miscellaneous notes, substantially as set forth.

18. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording miscellaneous notes, substantially as set forth.

19. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording data of time, weather conditions, etc., and a form for recording the result of shots fired during target practice, substantially as set forth.

20. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series

of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the radiating line on which the number is located, with a form for recording data of time, weather conditions, etc., and a form for recording the result of shots fired during target practice, substantially as set forth.

21. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording data of time, weather conditions, etc., and a form for recording the result of shots fired during target practice, substantially as set forth.

22. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording data of time, weather conditions, etc., and a form for recording miscellaneous notes, substantially as set forth.

23. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the radiating line on which the number is located, with a form for recording data of time, weather conditions, etc., and a form for recording miscellaneous notes, substantially as set forth.

24. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording data



of time, weather conditions, etc., and a form for recording miscellaneous notes, substantially as set forth.

25. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording the result of shots fired during target practice, and a form for recording miscellaneous notes, substantially as set forth.

26. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity and a direction indicated by the radiating line on which the number is located, with a form for recording data of time, weather conditions, etc., and a form for recording miscellaneous notes, substantially as set forth.

27. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording data of time, weather conditions, etc., and with a form for recording miscellaneous notes, substantially as set forth.

28. The combination of a rifleman's correction chart containing a target representation and a circular windage correction indicating device, with a form for recording

data of time, weather conditions, etc., a form for recording the result of shots fired during target practice, and a form for recording miscellaneous notes, substantially as set forth.

29. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of numbers arranged in sets, each set radiating from the center, and each number representing the lateral correction required to correct for the deviating component of a wind having a certain velocity, and a direction indicated by the radiating line on which the number is located, with a form for recording data of time, weather conditions, etc., a form for recording the result of shots fired during target practice, and a form for recording miscellaneous notes, substantially as set forth.

30. The combination of a rifleman's correction chart containing a target representation and a windage device consisting of a series of concentric circles, each corresponding to a certain velocity of the wind, and a series of numbers arranged in sets, each set radiating from the center toward one of the hour points of the clock-face, each number being the lateral correction in points and fractions of points required to compensate for the deviating component of a wind having a velocity as indicated on the circle on which the number is located, and having the direction indicated by the radiating line on which the number is also located, with a form for recording data of time, weather conditions, etc., a form for recording the result of shots fired during target practice, and a form for recording miscellaneous notes, substantially as set forth.

EDWARD NEELE JOHNSTON.

Witnesses:

ROBERT R. RALSTON,  
P. J. DEMPSEY.