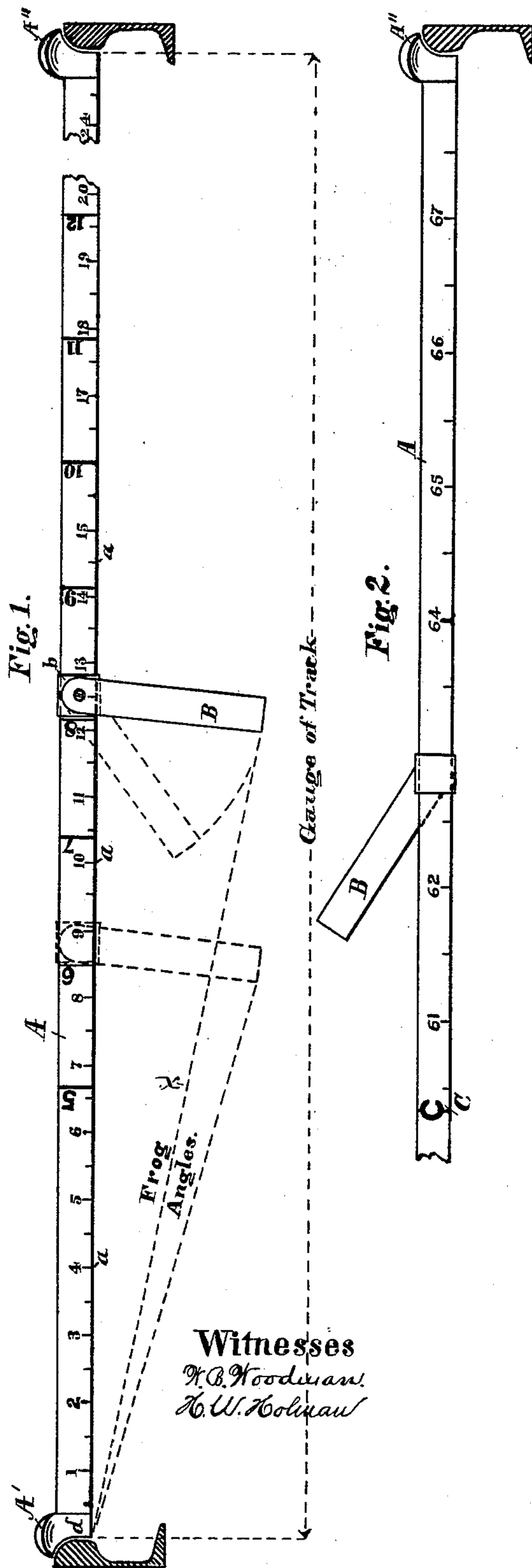


W. F. GOODHUE.
 Railway and Tramway Track Gage.

No. 223,225.

Patented Jan. 6, 1880.



UNITED STATES PATENT OFFICE.

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RAILWAY AND TRAMWAY TRACK GAGE.

SPECIFICATION forming part of Letters Patent No. 223,225, dated January 6, 1880.

Application filed April 12, 1879.

To all whom it may concern:

Be it known that I, WILLIAM F. GOODHUE, of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Railway and Tramway Track Gages; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front view of a railway and tramway track gage embodying my invention, and Fig. 2 a rear or reverse view of the same.

Like letters of reference indicate like parts.

The object of my invention is to produce a suitable apparatus, in compact form and convenient to carry on the person, for the use of roadmasters and others having charge of the construction and maintenance of railway and tramway tracks, by which the various widths of different tracks can be accurately gaged, and the size and angles of the railway-frogs determined, also giving the exact center between the two rails; and for the further purpose of laying off curves.

To that end my invention consists in the construction and combination of the various parts hereinafter described and claimed.

In the drawings, A represents the blade or measure, preferably of ribbon-steel, and of such a thickness as will permit it to be coiled closely together. This blade is provided at its ends with fingers A' A'', curved in such a manner as to be converse with the inner curve of the rails, as shown, and in length corresponds exactly with the distance between the rails.

B is a pivoted limb or arm provided with an elongated eye, b, through which the blade A passes. This limb or arm is movable in the direction of the length of the blade, and is so pivoted to the latter that it may be folded lengthwise with the same preparatory to its being coiled with the blade and placed in the case or box.

The front surface of the blade A is provided with a series of ordinates or deflection-distances of curves at different intervals of length

a, and extending over the entire length of the blade.

4, 5, 6, 7, 8, 9, and 10 are the frog numbers and scale, stamped or engraved upon the front surface of the blade, and of a text or style to distinguish them from the ordinate figures a. These frog numbers and scale are placed relatively to the end of the gage d as hereinafter more fully described.

The reverse or rear surface of the blade A is provided with any suitable linear scale or measurement, engraved, stamped, or otherwise fixed on the surface of the blade, and also with a suitable center line or notch, C, cut or otherwise formed into the blade. This center line or notch indicates the true center between the two rails.

In applying my invention to the various uses for which it is intended I proceed as follows: My track-gages correspond in length to the width of the tracks or distance between the rails of the various standards adopted by the different railways in this country. These standards comprise the narrow-gage, the standard-gage, and the broad-gage railways, &c. Thus, knowing that a railway or tramway track is of a certain standard, I take my gage, made to such standard, and determine the accuracy of the distance between the rails by applying my gage, as shown in Fig. 1.

The railway and tramway frogs are manufactured to various standard angles and sizes, which are known to the manufacturers by numbers—for instance, "frog No. 4," "frog No. 10," &c.—and their number signifies their respective angles. Thus, to determine the number or angle of a frog, the end d of the gage is held flush with the point of the frog or intersection of rails and along one of the sides thereof. The limb B is then distended, so it will be nearly at right angles with the edges of the blade, and is moved longitudinally, so that its side nearest the end d will coincide with one of the frog-number spaces 4, 5, 6, 7, 8, 9, and 10. Thus the member or arm B, placed in position and coincident with frog-number 8, as shown in the drawings, indicates that the frog is a No. 8, and the angle must correspond with the dotted line or frog-angle line, extending from the end d to the extreme end of the distended member or arm B, as shown.

It will be readily observed that as the member or arm B is moved to the right or left the angle described by the frog-angle line becomes acute or obtuse. By this means the correctness of the angle of the frog can be determined.

In the construction of curves my ordinate scale is used as a measurement for the deflections. For instance, in laying out a one-degree curve the deflection from the basis course will be in every fifty feet equal to the distance between the end *d* and 1. In a two-degree curve the deflection every fifty feet will equal the distance between the end *d* and 2, and so on.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the track-gage A, provided with the series of frog numbers and scales 4, 5, 6, 7, 8, 9, and 10, of the limb or arm B, substantially as and for the purpose specified.

2. The combination, with the track-gage A, provided with the curved fingers A' A'', frog numbers and scale 4, 5, 6, 7, 8, 9, and 10, of the limb or arm B, substantially as and for the purpose specified.

3. The combination, with the track-gage A,

provided with the scale of ordinates, fingers A' A'', frog scale and numbers 4 5 6 7 8 9 10, of the limb or arm B, substantially as and for the purpose specified.

4. The combination, with the track-gage provided with fingers A' A'', the point of center C, frog scale and numbers 4 5 6 7 8 9 10, of the limb or arm B, substantially as and for the purpose specified.

5. In a track-gage, the blade A, fingers A' A'', frog scale and numbers 4 5 6 7 8 9 10, point of center C, scale of ordinates, and limb B, substantially as and for the purpose specified.

6. In a track-gage, the blade A, fingers A' A'', frog scale and numbers 4 5 6 7 8 9 10, point of center C, scale of ordinates, limb B, and the linear scale or measurement, substantially as and for the purpose specified.

7. The combination, with blade A, provided with the frog scale and numbers 4 5 6 7 8 9 10, of the member or arm B, substantially as and for the purpose specified.

WILLIAM F. GOODHUE.

Witnesses:

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S. B. COCHRAN.