L. D. CROSS.

Gages for Setting Carriage Axletrees.

No. 136,819. Patented March 18, 1873.

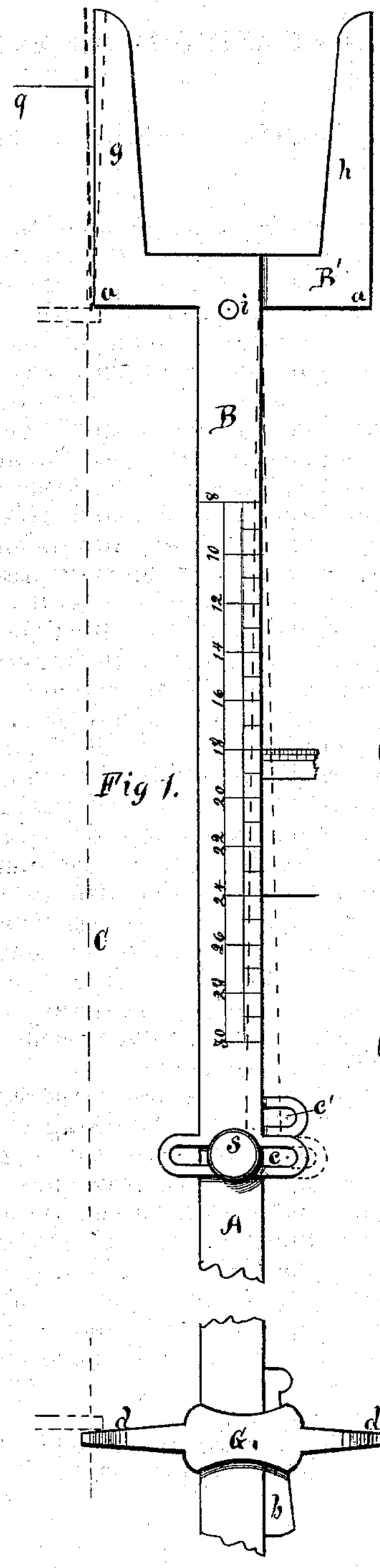

Fig 1.

Fig 3.

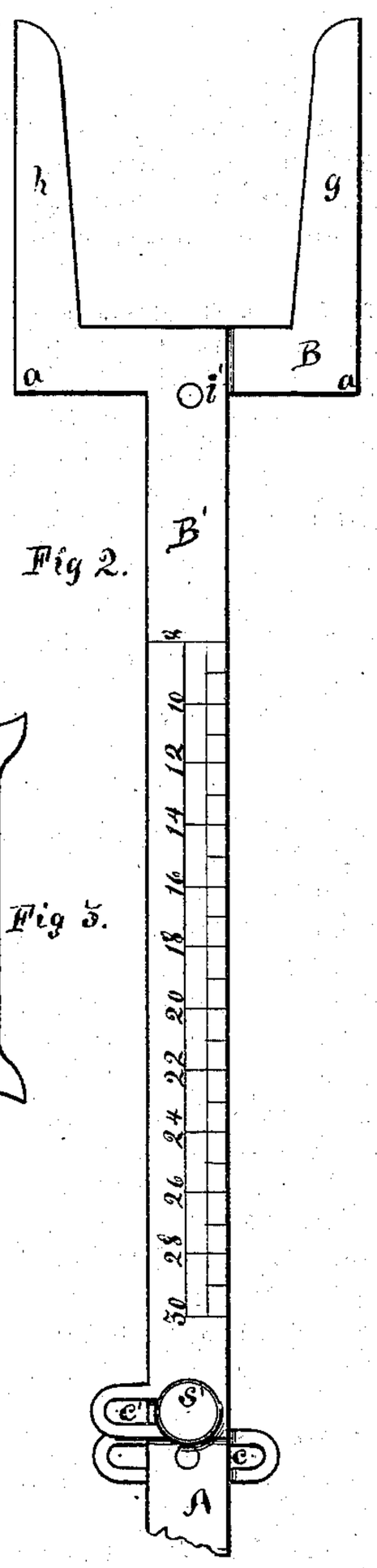

Fig 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

LEWIS D. CROSS, OF PHELPS, NEW YORK.

IMPROVEMENT IN GAGES FOR SETTING CARRIAGE AXLE-TREES.

Specification forming part of Letters Patent No. **136,819**, dated March 18, 1873.

To all whom it may concern:

Be it known that I, LEWIS D. CROSS, of Phelps, in the county of Ontario and State of New York, have invented certain Improvements in Implements for Setting Carriage Axle-Trees, of which the following is a specification:

The object of my invention, is to provide a simple and efficient device to be used by carriage ironers in determining the set of the axle-arms, which shall be readily adjustable to arms of various lengths and diameters or tapers; and it consists mainly in the employment of an angle-plate pivoted to one end of the main stock or bar, the opposite end of which is provided with a sliding or adjustable gage-rest, and the inner end of the angle-plates being adjustable laterally across the stock or main bar by means of a set-screw.

Figure 1 is a plan or face view of my invention. Fig. 2 is a similar view of the reverse side of the same, showing the angle or gage plate used in fixing the gather of the arms. Fig. 3 is an edge view of the rest G.

A represents the main bar or stock, composed of a straight flat bar of steel, or other suitable material. To one end of this bar at *i*, is pivoted an angle-bar, B, the inner end of which is adjustably attached to the bar A by the set-screw *s*, which may pass through the slot *c*, and be tapped into the bar A. Bar B should be graduated as shown, measuring from the pivoted point *i*. The bar B′, Fig. 2, is similarly constructed, and connected to the main bar A, and its adjustments and functions are substantially the same, as hereinafter more fully explained. The opposite end of the bar A is provided with a sliding or adjustable gage, G, secured thereto by a key, *b*, or otherwise. When the parts are in the adjustment shown in full lines, the outer edges of the legs *g* and *h* are perfectly parallel, and in line with the outer ends of the posts or rests *d* on the gage G.

The desired adjustments of the parts are ascertained and fixed in the following manner. The axle-trees to be set are previously welded and made of a proper length. The gage G is then so adjusted upon the bar A as to just receive the collars of the axle between the shoulder *a* and the foot *d* of the gage G, as represented by the dotted lines C, Fig. 1. Now, suppose the length of the arms to be set to be nine inches, and the taper or difference of diameter to be one-fourth of an inch; then swing the bar B down until its offset from bar A at the figure 18, which indicates the number of inches from the pivot *i*, shall measure one-fourth of an inch. This, it will be seen, would divide the difference in the taper or diameter of the arm, and therefore would indicate exactly the center line; and in order to make the implement indicate just the desired pitch or set to be given to the axle, which would be estimated according to the diameter and dish of the wheel, as heretofore practiced; and in this case, we will suppose the diameter to be forty-eight inches, the dish to be one-half inch; therefore move the arm B back one-half inch at the twenty-four-inch mark, which is one-half of the diameter of the wheel, and there secure it by the set-screw *s*.

The arm B′ is similarly adjusted, to gage the gather of the arm.

It is obvious that any desired degree of curvature, either arched or sag, may be given to the axle-tree, and still the arms be accurately set by the use of this gage.

What I claim as my invention is—

In combination with the stock A of carriage-axle setters, the graduated bars B and B′ having the fixed arms *g* and *h*, and the adjustable gage G, arranged to be adjusted in the manner and for the purposes set forth.

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Witnesses:

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