

United States Patent Office.

GOTTLIEB LUEDKE, OF PRINCETON, WISCONSIN.

Letters Patent No. 98,280, dated December 28, 1869.

IMPROVEMENT IN AXLE-GAUGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, GOTTLIEB LUEDKE, of Princeton, in the county of Green Lake, and State of Wisconsin, have invented a new and improved Axle-Gauge; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to provide improved gauges for readily determining the pitch for the arms of the wood-axles, by which to be guided in dressing down the said arms for the reception of the skeins, so that when the wheels are placed therein, the spokes of dished wheels will, when at the under side of the hubs, stand perpendicular.

The invention comprises a bar made in two parts, joined at the centre, and adjustable lengthwise, whereon, upon the sides, gauge-supports, consisting of flat bars with right-angular projecting arms supporting the gauges, are pivoted at the angles, and ranged along scales, by which the said gauges, which consist of short blocks about the length of the axle-arms, with adjustable gauge-screw, and supported by the said right-angled projection of the gauge-supports, in advance of the edges of the bar, may be adjusted to the required inclination to the longitudinal line of the bar, the said inclination being ascertained from the inclination of the spokes and the taper of the axle-arms, as hereinafter more fully specified.

Figure 1 represents a side elevation of an axle-gauge, constructed according to my invention.

Figure 2 represents a side elevation of a modified arrangement of the same, and

Figure 3 represents a face view of one of the blocks.

A represents the stock or bar of the gauge, which is made in two parts, lapping each other, as shown at B, and provided with a clamping-screw, C, whereby the said stock is lengthened or shortened for axles of different lengths.

D represents gauge-block supports, consisting of long flat plates of metal or other substance, having right-angled projections E, supporting, at their outer ends, the gauge-blocks F, and pivoted to the sides of the stocks A, one at each end, at the angles, so that the long arms stand parallel with the stocks, and the short arms at right angles thereto.

Along one edge of these arms D, when standing exactly parallel with the edges of the stock, a right line, G, is drawn, having a scale marked on it in inches, beginning at the pivots of the arm D, and numbering toward the centre.

H represents curved slotted bars, under which the arms work, and through the slots of which the clamp-

ing set-screws I, connecting to the said arms, work, to secure them at any required point.

The blocks F have pins or screws K L M projecting therefrom, which, when the gauge is applied to the axle, represent what the line of the lower part or surface of the axle-arms would be, and by the aid of which the said line is determined.

The pins K and M should project the same distance. The latter are adjustable to or from the pins K for axle-arms of different lengths.

The pins g have grooved heads to gauge the curvatures of the said arms, and may be adjusted inward or outward, as preferred.

To use the gauge, the stock A being first adjusted to the proper length for the axle, so that the pins M will stand at the collars of the arms, I first ascertain the distance of the radii of the wheel, and then the "dish" or concavity of the same.

Supposing the first to be, say, twenty-four inches, and the second, one and a half, I take a pair of dividers, separating the points one and a half inches, and space of that distance from the line G, at the twenty-four-inch scale-mark above the said line, and set the arm D, at the said distance from the said line. This would give the required vertical line of the spokes below the hub, if the axle-arm and the hole through the hub are of the same diameter throughout the whole length, which is not the case.

To compensate for this, I find that by taking the one-half of the difference in the diameters of the axle-arms at the inner and outer ends, the circulation of the one side thereof form the line which may be supposed to be three-quarters of an inch in a line of ten inches in length. Then setting the dividers at three-quarters of an inch, I space back from the edge of the arm D, at the scale number ten, the said distance, moving the arm thereto, and securing it. This done, the pins M K of the blocks F will indicate the required inclination for the under side of the axle-arm, which I dress down flat to this said inclination, afterwards rounding it up to the required taper, from this line as a base, fitting the skeins thereto, to agree with the line thus indicated by the gauge.

For obtaining the pitch of the axle-arms, without reference to the size or "dish" of the wheel, I have provided, on the opposite side of the stock A, other guide-block supports, D E, of similar construction and arrangement, but shorter in the arms D, by which, taking one-half the taper of the arm, or one-half the difference between the large and small diameters of the said arms, and setting the arms D upward from the line G, at the scale-mark corresponding to the length of the axle-arm, I obtain the inclination for the arms at any side.

It will be understood that the blocks F, at each end of the stock, are to be similarly adjusted.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The combination with the stock A, made in two parts, adjustable lengthwise, and provided with scales, as described, of the gauge-block-supporting arms D E or D' E', substantially as specified.

2. The combination with the gauge-blocks F, when

arranged with reference to their supports, and the stock A, as specified, of the pins K L M, when arranged as specified.

The above specification of my invention signed by me, this 15th day of June, 1869.

GOTTLIEB LUEDKE.

Witnesses:

C. G. PARKHURST,
L. FISHER.