(No Model.)

C. ROBERTS.

TRACK GAGE AND LEVEL.

No. 487,375. Patented Dec. 6, 1892.

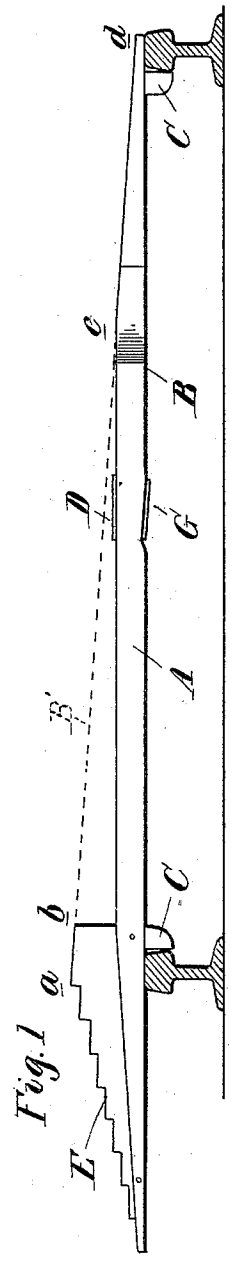

Fig. 1

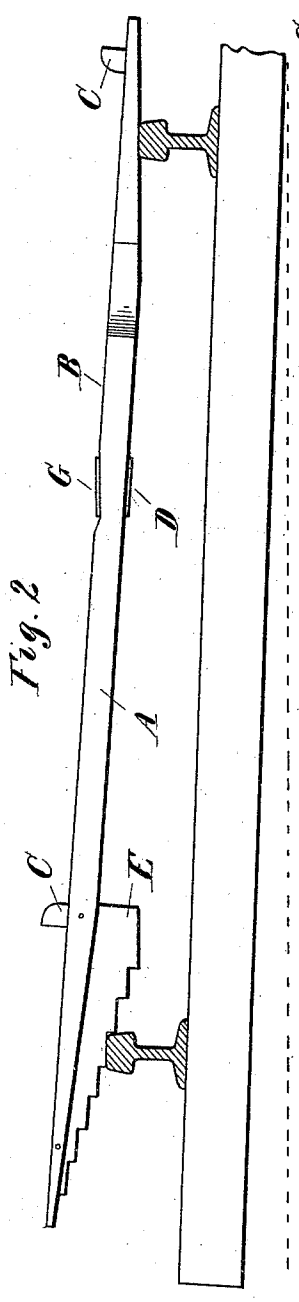

Fig. 2

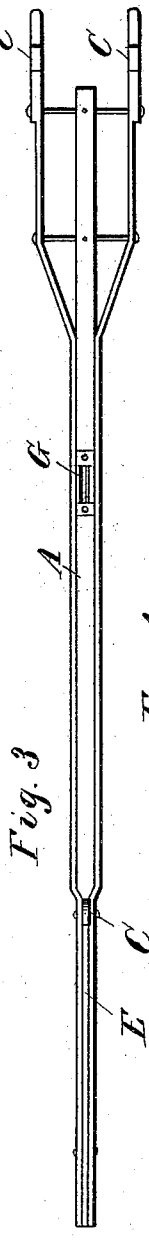

Fig. 3

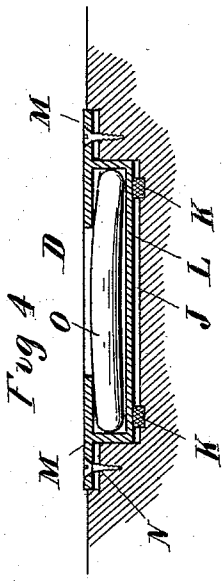

Fig 4

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UNITED STATES PATENT OFFICE.

CYRUS ROBERTS, OF THREE RIVERS, MICHIGAN.

TRACK GAGE AND LEVEL.

SPECIFICATION forming part of Letters Patent No. 487,375, dated December 6, 1892.

Application filed July 1, 1891. Serial No. 398,194. (No model.)

To all whom it may concern:

Be it known that I, CYRUS ROBERTS, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Gage-Bars and Levels, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in a combined gage-bar and level; and it consists in the peculiar construction of a bar having gage-pins upon one edge and graduations or degrees upon the other, in combination with two levels, all combined and arranged for use in laying or examining railway-tracks to fix the gage and the proper elevation of the rails at a curve.

The invention further consists in the peculiar construction of the level and the means of securing it in position in the bar, and, further, in the peculiar construction, arrangement, and combination of the various parts.

In the drawings, Figure 1 is a side elevation of my improved device, showing it used as a track-gage. Fig. 2 is a similar elevation showing its use as a level upon a railway-track at a curve. Fig. 3 is a plan view thereof, and Fig. 4 is an enlarged section showing the manner of securing the level-glass in position.

A is a bar, preferably of metal and bifurcated at one end. It is straight upon the edge B and is provided thereon with the gage-pins C, the distance of which from outside to outside is equal to the gage or distance between the rails of a track. Upon the opposite side is secured the level D, arranged parallel to the straight edge B, so that when the bar is laid with this edge across the rails and with the two gage-pins at the bifurcated end in contact against the inner side of one rail the gage-pin at the other end will determine whether the track is of the right gage or not and the level D will indicate whether the rails are on a level or not, and thus the device is adapted for a track-gage in laying rails. The bar A extends at its bifurcated end only far enough to form bearings on the rail beyond its gage-pins, while at the other it extends far enough to form in addition to such bearing a securing portion for the plate E. This plate projects from the edge of the bar opposite to the edge B and has graduations or what are termed "degrees." The inner one, projecting farthest from the edge of the bar, is in a straight line with a portion of the edge of the bar at the opposite end—that is, the portion *a b* on the plate and the portion *c d* on the bar must form a straight line B′, while the other degrees must form a regular series of steps toward the end of the bar, each step having a determined rise, ordinarily made equal to one-half an inch. A second level G is provided, which is set into the edge B and which is parallel with the edge B′.

When it is desired to ascertain the elevation of the outer rail at a curve or any other point, the bar A is reversed from the position shown in Fig. 1 to that shown in Fig. 2, placing the graduated plate E upon the outer or higher rail. By adjusting the bar across the track until the line B′ is at a level the elevation of the outer rail over the inner rail is indicated by the number of the degree on which said rail bears, or in applying the device in the construction of a curve the outer rail is engaged with the desired degree on the plate E and raised up until the level G shows the bubble in the center.

In order to secure the glass of the level properly in position without danger of breaking and so that it may be adjusted or corrected, I preferably form a recess J at the point where the glass is to be inserted. In the bottom of this recess I place the elastic cushions K, preferably of rubber, and upon these I place the box L, in which the glass O is contained, being preferably cemented therein by plaster-of-paris or other cement. A securing plate or cover M is then secured over the top by screws N in such a manner that the box is firmly but adjustably held in place against the cushions. By tightening the screws N more or less the level may then be accurately adjusted, while at the same time it is protected from jars and jolts liable to break it. The device thus constructed is simple and can be used by the unskilled track-layer, and it serves all the ordinary contingencies of track-laying with a proper degree of accuracy. A particular advantage of its construction is that the gage is at one edge, while the other edge is for use as a level, whereby the gage-pins are not liable to inter-

fere with switch or guard rails when the device is used for leveling. The bifurcated end of the bar allows the instrument to be laid on the track or shoved along the same without tumbling over, and to this end it is made long enough to serve in this manner for any degree on the plate E. The bifurcations also, in connection with the two gage-pins thereon, form the means for adjusting the device at right angles to the track when using it as a gage.

A modified form of the construction herein shown and described I have made the subject-matter of a concurrently-pending application filed July 1, 1891, Serial No. 398,193.

What I claim as my invention is—

1. In a track gage and level, a bar provided upon one edge with gage-pins adapted for gaging the track and upon the other with a series of degrees arranged to engage with and adapted for leveling the track upon different heights of rails, substantially as described.

2. In a track gage and level, a bar provided upon one edge with gage-pins and upon the opposite edge with a graduated plate secured to an extension of the bar at one end, said gage-plate having its farthest projecting edge formed in a straight line with the edge on the end of the bar, and a level secured in the bar parallel to said line, substantially as described.

3. In a track gage and level, a bar provided upon one edge with gage-pins and upon the opposite edge with a graduated plate, said gage-plate being secured to an extension of the bar at one end and having its farthest projecting edge formed in a straight line with the edge on the opposite end of said bar, a level parallel to said straight line, and a level parallel to the edge having the gage-pins, said edge being straight, substantially as described.

4. In a track-gage, the combination, with the gage-bar having gage-pins, of a series of degrees on the bar, arranged to engage with the track, and a level on the bar, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CYRUS ROBERTS.

Witnesses:
M. B. O'DOGHERTY,
S. M. HULBERT.