C. SCHWEIKERT AND T. W. O'ROURK.

SPOT BOARD FOR RAILROAD SURVEYING.

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Fig. 1.

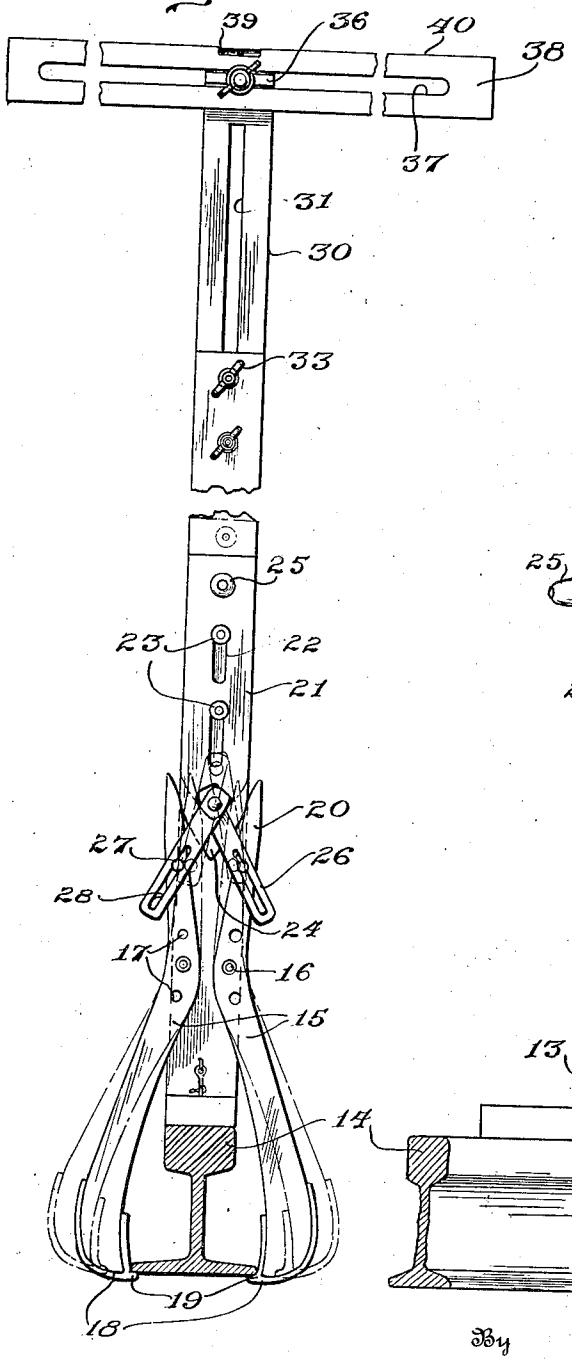
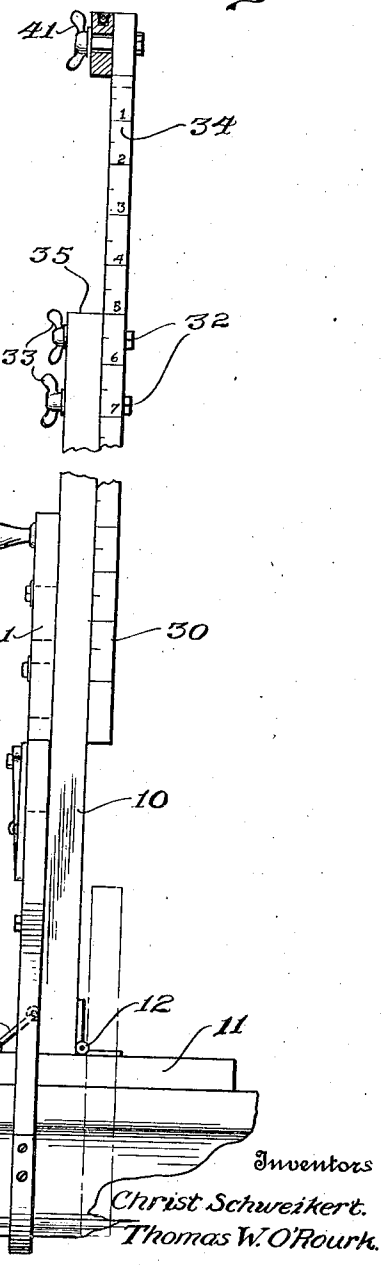


Fig. 2.



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CHRIST SCHWEIKERT AND THOMAS W. O'ROURK, OF DUBUQUE, IOWA.

SPOT BOARD FOR RAILROAD SURVEYING.

Application filed August 4, 1921. Serial No. 489,708.

To all whom it may concern:

Be it known that we, CHRIST SCHWEIKERT and THOMAS W. O'ROURK, citizens of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Spot Boards for Railroad Surveying, of which the following is a specification.

Our invention relates to an instrument used in surveying railroads and particularly for determining the grade of the rails, and the object of the invention is to provide such an instrument that is portable and easily applied to and detached from the rail.

Another object of the invention is to so construct this instrument, that it can be adjusted for different sizes of rails and also adjusted for different heights within certain limits.

One embodiment of the invention is illustrated in the accompanying drawing, in which—

Figure 1 shows a front elevation of our spot board in position on top of the rail, and

Figure 2 is a side view of Figure 1.

Our spot board which may be built up of wood or constructed of metal, consists of a standard 10 having a foot 11 attached at its lower end. This foot is preferably hinged as at 12 so that it may be folded along the standard during transportation, and securing means 13 such as a hook and staple is provided on the opposite side of the standard to retain the foot at right angles to the standard when placed on top of a rail 14.

A pair of tongs consisting of two jaws 15 are fulcrumed on bolts 16 a short distance above the foot of the instrument and the jaws are provided with three holes 17 each, for the purpose of adjusting the width of the grip of the tongs in accordance with the size of the rail.

The jaws 15 are preferably provided with shoes 18 having inward projections 19 for gripping under the flat bottom of the rail. The upper ends of the jaws are formed as a pair of short arms 20 which are slightly tapered outwardly.

An actuating slide 21 provided with longitudinal slots 22 is mounted to slide up and down along the front face of the standard 10, and for this purpose the securing bolts 23 engage in the slots 22 in such a manner that the actuating slide 21 may be made to move easily up and down. The lower end of the actuating slide 21 has a wedge shaped nose 24 which is intended for engaging between the inner sides of the tapered arms 20. It will be evident from the drawing that when the adjusting slide 21 is pushed down by means of its handle 25, it will cause the jaws 15 to close around the bottom flange of the rail, thereby holding the standard tightly upon the latter.

In order to release the tongs from the rail the actuating slide 21 is drawn upwardly with the links 26 journaled on the wedged nose 24 and engaging by means of their slots 28 with studs 27 provided on the arms 20.

On the back of the standard 10 an extension rod 30 is mounted to slide, and is for this purpose provided with a longitudinal slot 31 engaging a pair of bolts 32. One or both of these bolts 32 are provided with wing nuts 33 for clamping the extension rod in any desirable position along the standard 10. On the side of the extension rod we have shown a graduation 34 which is intended to read against an index mark 35 which may be the top edge of the standard 10.

At its free end the extension rod 30 has a transverse guide 36, engaging in longitudinal slot 37 provided in the level bar 38, which carries in its center a level 39 along its upper side, formed as a straight edge 40. A clamping bolt with a wing nut 41 runs through the extension rod 30 to the opposite side of the level bar 38, and is intended for securing the bar in any suitable position across the extension rod 30.

The use of the instrument is as follows:

The foot 11 is first turned down from the folded position, shown in dot-and-dash lines in Figure 2, into its transverse position and secured by hook 13 and the instrument applied in up-right position on top of the rail, the grade of which is to be determined. The actuating slide 21 is then pushed down until the jaws 15 grip tightly with their projecting points 19 under the bottom of the rail 14. Supposing now that the height of the standard, measured from the bottom face of its foot 11 to the straight edge 40, is exactly 2 feet and that the graduation 34 is made in inches and subdivisions thereof; and supposing furthermore that the rail should be graded to a height of 2 feet 5 inches below a certain base line, the rod 30 is then extended to show the numeral 5 opposite the index mark 35 and an observation from the

surveying instrument may then be taken to the straight edge 40 of the level bar 38.

When a reading is taken along curves in a railroad the level bar 38 is pushed out to one side as required by the conditions, and clamped in position by means of clamping bolt and nut 41.

Having thus described the invention what is claimed as new is:

1. In a clamping device including a standard, a pair of tongs adapted to clamp said standard to a rail, and a slidable wedge for actuating said tongs.

2. In a clamping device including a standard, a pair of jaws journaled on said standard, said jaws having inwardly projecting lugs for engaging under the bottom of a rail and upwardly projecting arms, a slidable wedge on said standard adapted to engage between said arms for closing said jaws.

3. In a clamping device including a standard, a pair of jaws journaled on said standard, said jaws having inwardly projecting lugs for engaging under the bottom of a rail and upwardly projecting arms, a slidable wedge on said standard adapted to engage between said arms for closing said jaws, and means on said wedge for opening said jaws.

4. In a clamping device including a standard, a pair of jaws journaled on said standard, said jaws having inwardly projecting lugs for engaging under the bottom of a rail and upwardly projecting arms, a slidable wedge on said standard adapted to engage between said arms for closing said jaws, and a plurality of journaled bearings on said jaws for changing the length of said arms.

5. In a clamping device including a standard, a pair of jaws journaled on said standard, said jaws having inwardly projecting lugs for engaging under the bottom of a rail and upwardly projecting arms, a slidable wedge on said standard adapted to engage between said arms for closing said jaws, and securing bolts for said wedge engaging in suitable slots provided therein, said bolts being mounted on said standard.

6. The combination with a spot board for railroads comprising a standard; of means for clamping said standard in upright position to a rail, said means including a pair of jaws journaled on said standard, said jaws having inwardly projecting lugs for engaging under the bottom of the rail and upwardly projecting arms, a slidable wedge on said standard adapted to engage between said arms for closing said jaws, and link connection between said arms and said wedge for opening said jaws.

In testimony whereof we affix our signatures.

CHRIST SCHWEIKERT. [L. S.]
THOMAS W. O'ROURK. [L. S.]