

F. O. NELSON.

TARGET CLAMP.

APPLICATION FILED JAN. 30, 1911.

1,017,229.

Patented Feb. 13, 1912.

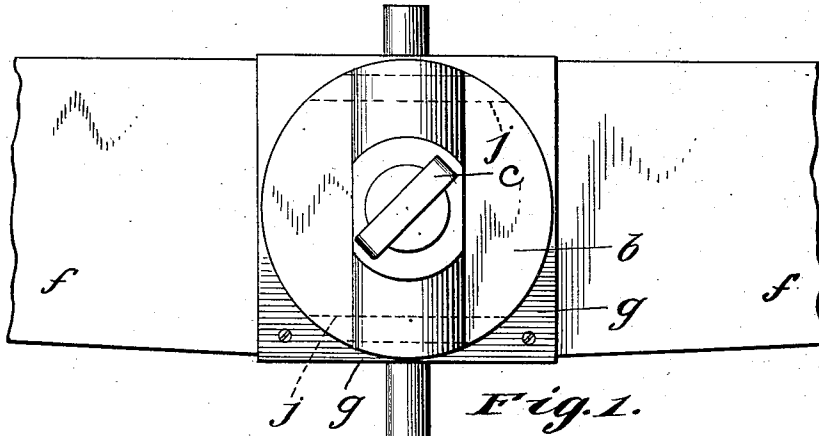


Fig. 1.

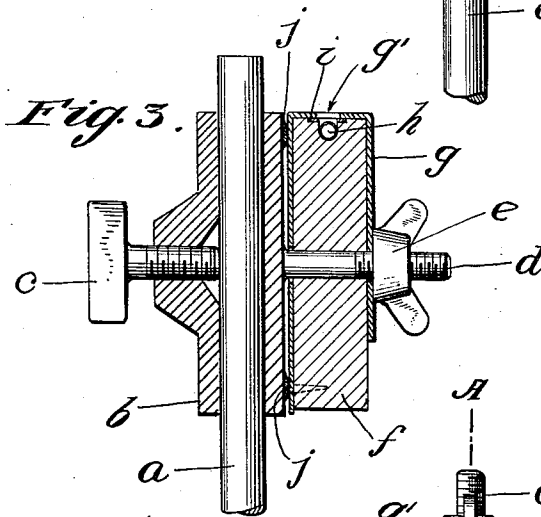


Fig. 3.

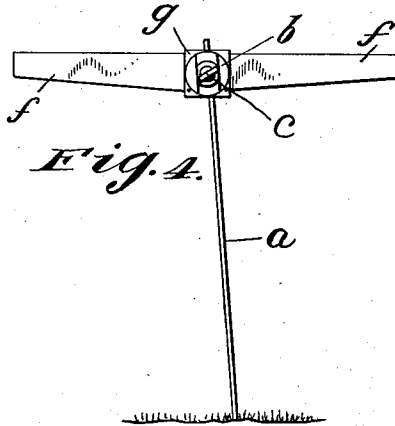


Fig. 4.

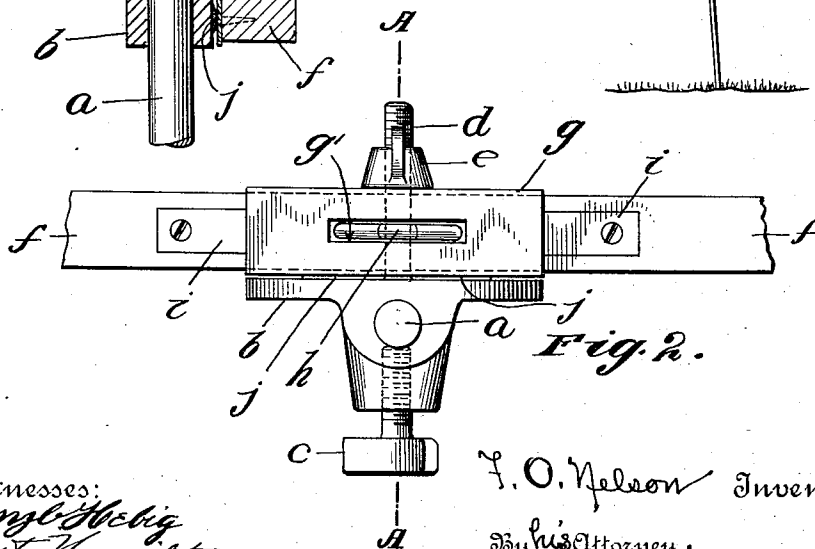


Fig. 2.

Witnesses:
George H. Big
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By his Attorney
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UNITED STATES PATENT OFFICE.

FRED OSCAR NELSON, OF ESTHERVILLE, IOWA.

TARGET-CLAMP.

1,017,229.

Specification of Letters Patent.

Patented Feb. 13, 1912.

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To all whom it may concern:

Be it known that I, FRED OSCAR NELSON, a citizen of the United States, residing at Estherville, in the county of Emmet and State of Iowa, have invented certain new and useful Improvements in Target-Clamps, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in grading instruments such as are used in grading tile ditches and like engineering operations and particularly to improvements in the clamping means by which the crossarm, "target" or level of such an instrument is held in adjusted position on its supporting rod; and an object of this invention is to provide a grading instrument having a supporting rod and a crossarm or target with clamping means for the latter which will prove simple in construction, comparatively cheap in manufacture and most efficient, handy and convenient in use.

15 In the drawings illustrating the principle of this invention and the best mode now known to me of applying that principle, Figure 1 is a front elevation of so much of the instrument as is necessary to illustrate this invention; Fig. 2 is a plan of the same; 20 Fig. 3 is a section on the line A—A of Fig. 2; and Fig. 4 shows the instrument in position in use.

Upon the supporting rod *a* is slidably mounted a carrier-block *b* provided with a set-screw *c* by which the carrier-block may be fastened securely in its adjusted position on the rod *a*. The carrier-block *b* is formed with a screw-stud *d* upon the threaded end of which is screwed a wing-nut *e*. The crossarm *f* is mounted in an inverted U-shaped bracket-plate *g* one leg of which is slightly shorter than the other, as is shown in Fig. 3. In the top of the bracket-plate *g* there is formed a slot *g'* through which 45 may be viewed the vial *h* of the level *i* with which the crossarm *f* is provided. The screw-stud *d* projects through a hole in the crossarm *f* and through holes in the legs of the inverted U-shaped bracket-plate *g*, from which it follows that the crossarm is pivotally mounted upon the screw-stud *d*. By tightening the wing-nut *e*, the crossarm *f* may be held in its adjusted position. The face of the carrier-block *b* which is opposed 50 to the longer leg of the bracket-plate *g* is preferably formed with ribs or ridges *j*.

These ribs *j* tend to prevent slipping between the carrier-block and the bracket-plate *g* and thereby to hold the crossarm *f* more securely in its adjusted position.

The clamp may be used for holding crossarms which support grading lines and for holding a crossarm on a gage rod used for measuring. My new clamp permits the crossarm to be slipped up and down upon the supporting rod for purposes of adjustment, without disturbing the level of the crossarm. Again, after the carrier-block *b* has been adjusted for height, the crossarm or target *f* may be leveled without disturbing the adjustment for height. The carrier-block *b* is made round so that in adjusting the crossarm or target *f* to a level no corners will be left projecting.

I claim:

1. A grading instrument having a supporting rod; a carrier-block which is adjustably mounted thereon and which is formed with a pivot-stud and provided with a device for fastening said carrier-block upon said rod in its adjusted position, a bracket-plate pivotally mounted on said pivot-stud; a crossarm mounted in said bracket-plate; and means for fastening said crossarm and bracket-plate in adjusted position on said pivot-stud.

2. A grading instrument having a supporting rod; a crossarm provided with a level; a carrier-block slidably mounted upon said rod and provided with a device for fastening said carrier-block upon said rod in its adjusted position, said carrier-block being formed with a pivot-stud; a U-shaped bracket-plate the legs of which are pivotally mounted on said pivot-stud and the base of which overlies and protects the vial of said level and is formed with a slot through which said vial may be viewed, said crossarm being mounted in said bracket-plate and pivotally upon said pivot-stud; and means for fastening said crossarm and bracket-plate in adjusted position on said pivot-stud.

3. A grading instrument having a supporting rod; a crossarm provided with a level; a carrier-block slidably mounted upon said rod and provided with a device for fastening said carrier-block upon said rod in its adjusted position, said carrier-block being rounded and being formed with a pivot-stud which projects from one of the faces of said carrier-block, said face being

ribbed; a U-shaped bracket-plate the legs of which are pivotally mounted on said pivot-stud and the base of which overlies and protects the vial of said level and is formed with a slot through which said vial may be viewed, said crossarm being mounted in said bracket-plate and pivotally upon said pivot-stud; and means for fastening said crossarm and bracket-plate in adjusted position on said pivot-stud.

4. A grading instrument having a supporting rod; a rounded carrier-block slidably mounted thereon and provided with a device for fastening said carrier-block upon

said rod in its adjusted position, said carrier-block being formed with a centrally-disposed pivot-stud; a crossarm pivotally mounted upon the latter; and means mounted on said pivot-stud for fastening said crossarm in its adjusted position upon said pivot-stud.

In testimony whereof I hereunto set my hand at Estherville, Iowa, in the presence of the two undersigned witnesses.

FRED OSCAR NELSON.

Witnesses:

C. E. PERSON,
J. W. MORSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."