

No. 281,133.

L. F. PONTIOUS.
DRAIN TILE DITCH LEVEL.

Patented July 10, 1883.

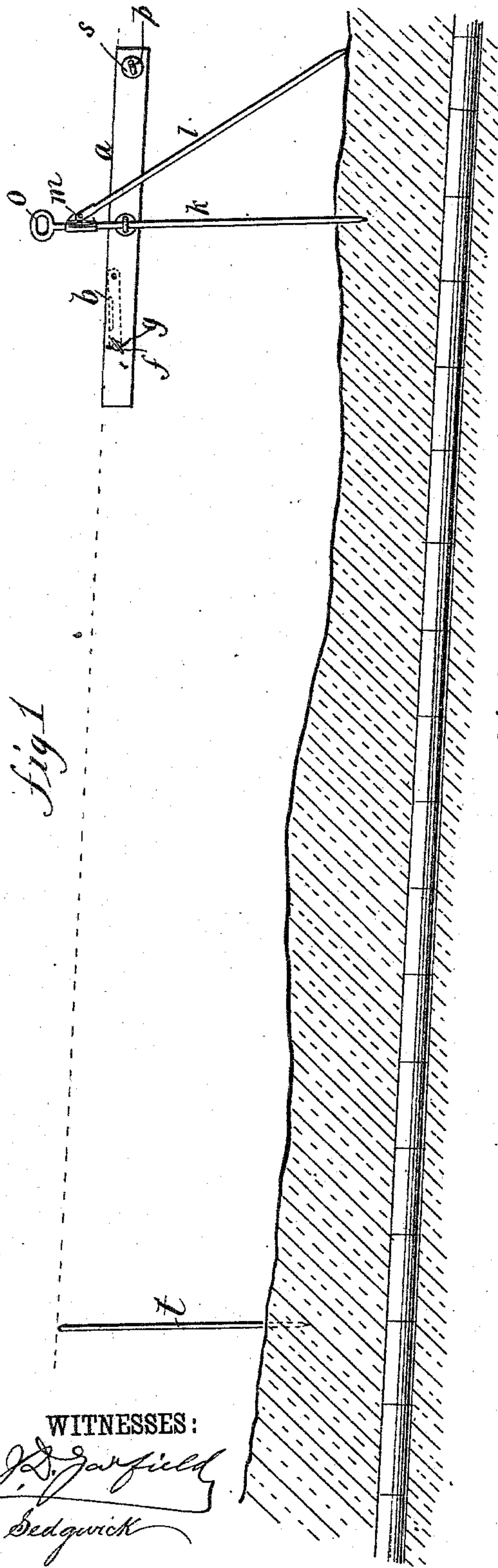


Fig 1

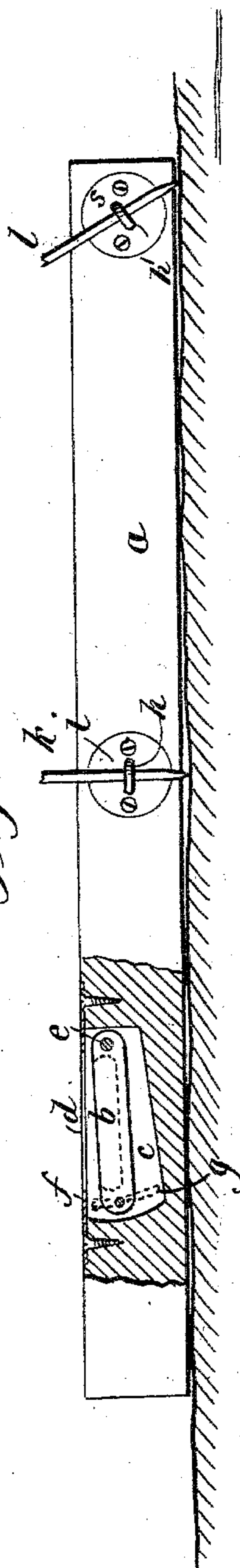


Fig 2

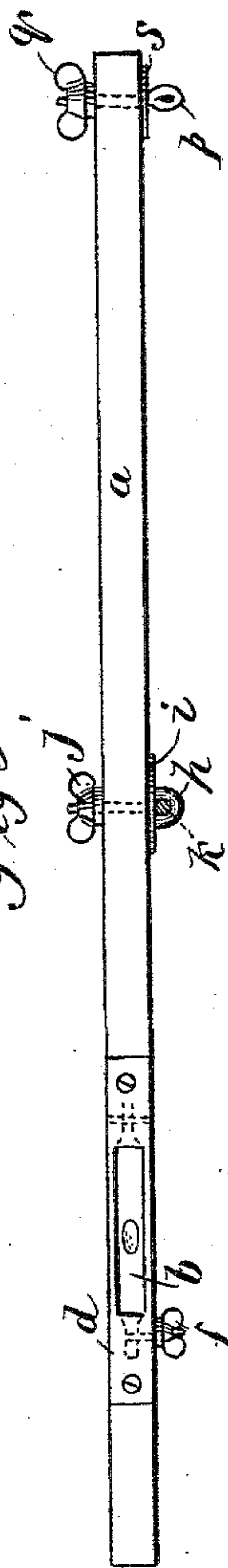


fig 3.

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LYMAN F. PONTIOUS, OF ADAIR, ILLINOIS.

DRAIN-TILE-DITCH LEVEL.

SPECIFICATION forming part of Letters Patent No. 281,133, dated July 10, 1883.

Application filed April 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, LYMAN F. PONTIOUS, of Adair, in the county of McDonough and State of Illinois, have invented a new and Improved Drain-Tile-Ditch Level, of which the following is a full, clear, and exact description.

My invention consists of a device by which to take the inclination of the ground to be drained and set a spirit-level to show the said inclination on the stock to which the level is attached, the said stock being provided with legs whereon to set it for ascertaining the inclination, which legs are also adapted for being so adjusted to the stock that they serve for a handle by which the stock can be conveniently laid on the bottom of the ditch to gage the inclination by a person standing on the bank, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the device in the position in which it is used to ascertain the inclination of the ground to be drained, for a guide by which to gage the inclination of the bottom of the tile-ditch. It also represents a profile of the ground to be drained. Fig. 2 is a side elevation of the device in the position for gaging the bottom of the ditch, with a part in section; and Fig. 3 is a plan view of the device as represented in Fig. 2, without the leg or handle attachment.

To a wood stock, *a*, of similar construction as is commonly used for a carpenter's or mason's spirit-level, but preferably of larger or longer dimensions, I arrange a bubble-vial, *b*, in a recess, *c*, under a top plate, *d*, on a pivot, *e*, at one end, so that it may swing downward from the plate *d* at the other end, where it is provided with a binding-screw, *f*, projecting out through a slot, *g*, in the side of the stock, suitably for fastening the vial *b* at any desired point, the said bubble-vial being level with the stock when the free end is shifted up to and fastened against the top plate, *d*. This bubble-vial is preferably located about midway between one end and the middle of the stock, and at the middle of said stock I have an eyebolt, *h*, extending through the stock, and a metal washer, *i*, with a binding-nut, *j*, on the other side, by which to secure the stock to a

supporting-rod, *k*, on which the stock may be shifted up and down the whole length of the rod, or nearly so, and the stock may also be turned on the rod to level the stock or incline it either way from the level. In order to bind the rods against the washers, the eyebolts have their eyes drawn partially through the washers, as shown in Fig. 3 of the drawings. This supporting rod or leg *k* has a brace, *l*, of similar character, jointed to it at *m*, near the upper end, for steadying the stock when set up on rod *k* for use, both the rod and the brace being pointed to set in the ground. The top of the supporting-rod *k* is provided with a handle, *o*, for a convenient means of handling the device when used for gaging the bottom of the ditch.

Near the end opposite to where the bubble-vial is mounted the stock is provided with another eyebolt, *p*, having a binding-nut, *q*, and a washer, *s*, to connect the brace *l*, the same as support *k* is connected when the device is used for gaging the ditch. In the first place, to obtain the inclination of the ground to be drained, I set up the level on the rod *k* and brace *l*, as in Fig. 1, where the lower end of the drain is to be, then set up a stake, *t*, at the upper end, or thereabout, the stake being of the same height as the height of the level on the rod *k*, and set the stock of the level to the inclination of the sight-line from the stock to the top of the stake. Then I adjust the bubble-vial by shifting its fore end down until the bubble shows level, and fasten it in that position. Then I attach the supporting-rod and brace, at their lower ends, to the stock by the eyebolts *h* and *p*, for a handle, as in Fig. 2, by which to lower the level into the ditch from the bank whenever it may be required to gage the bottom by the level, which will have the proper inclination when the bubble shows level, said bubble-vial being inclined to the stock, as above stated.

The special merit of this invention is that the device is an ordinary level when the bubble-vial is set up against the top plate, while by the manner of its adjustability on the supporting-bar and of the bubble-vial it is a grading-level, and by the contrivance for using it in the ditch it is a convenient and practical gage for grading the ditch.

My improved level is also useful for tiling or ditching level land, as follows: An outlet for a drain on level land can frequently be

had, and in such cases a main tile can be laid down five or six feet deep along one side of the field, if an outlet is found into some slough or gully; then tile can be laid from this main
5 tile out into the field at suitable distances apart, all connected with the main tile, which, being down deep, would give sufficient fall to the other tiles for long distances—say from
10 forty to eighty rods or more. To use my level for this purpose all that is needed is to make the stake *t* longer—say, if the main tile is six feet deep, and the branch tile connected with
15 it and to run out across the field, say, forty rods or more, is to end within, say, a foot of the top of the ground, all that is necessary is to add five feet to length of stake *t*—that is, make it five feet higher than the distance from
20 the top of the level-stock to the ground; then take sight at the top of stake and set the level, as before.

When the rods are taken out of the eyes and laid down with the level-stock and tied to it, the level is then convenient to ship or carry about.

Having thus described my invention, I claim 25 as new and desire to secure by Letters Patent—

1. The stock *a*, having the adjustable bubble-vial *b*, and adjusting supporting-eyebolt *h*, and washer *i*, in combination with the supporting-rod *k* and brace *l*, substantially as de- 30 scribed.

2. The stock *a*, having the adjustable bubble-vial *b*, and adjusting supporting-eyebolts *h p*, and washers *i s*, in combination with the supporting-rod *k* and brace *l*, substantially as 35 described.

3. The stock *a*, having the adjustable bubble-vial *b*, and adjusting supporting devices *h p* and *i s*, in combination with the supporting-rod *k*, brace *l*, and handle *o*, substantially as 40 described.

LYMAN F. PONTIOUS.

Witnesses:

WM. L. CLAYTON,
S. LEIGHTY.