Sept. 25, 1951 L. E. RIDGEWAY 2,569,019

CONTOUR MARKER AND LAYOUT TOOL

Filed April 21, 1945

FIG. 1

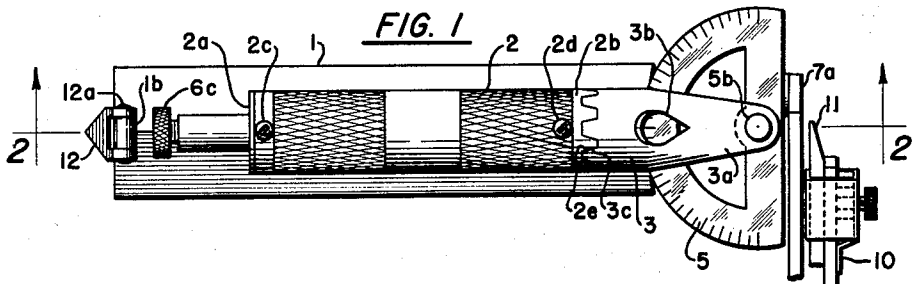


FIG. 2

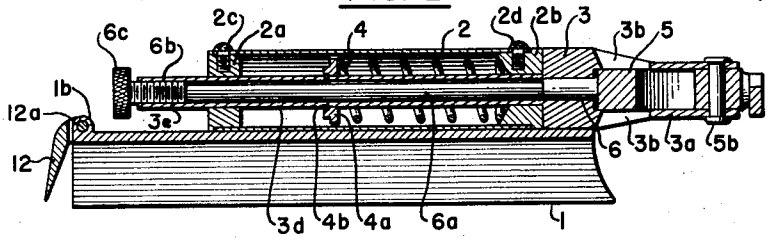


FIG. 4

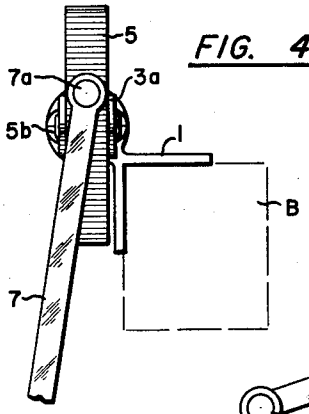
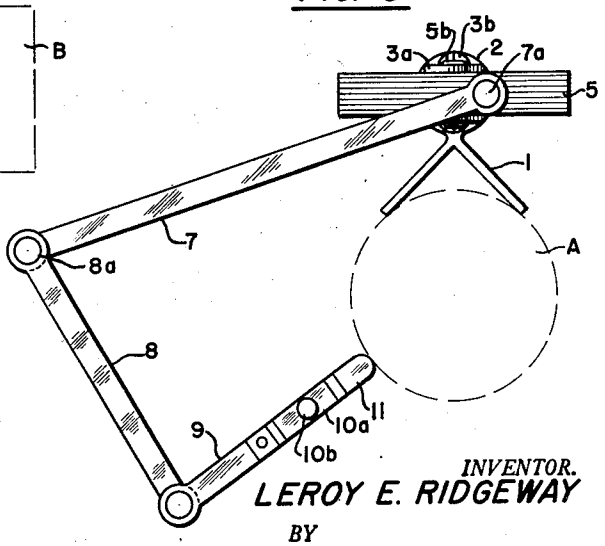


FIG. 3



INVENTOR.
LEROY E. RIDGEWAY
BY
A. B. Bowman
ATTORNEY

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CONTOUR MARKER AND LAYOUT TOOL

Leroy E. Ridgeway, Long Beach, Calif.

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3 Claims. (Cl. 33—21)

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My invention relates to a contour marker and layout tool and the objects of my invention are:

First, to provide a device of this class with an adjustable head whereon a protractor is mounted, thus allowing adjustment of the scribing apparatus in two planes;

Second, to provide such an adjustable head with spring and ratchet holding means whereby quick and accurate adjustment may be achieved;

Third, to provide such an adjustable head with ratchet holding means enabling any suitable number of settings such as 45° and 90° both right and left to facilitate the marking of stationary, partially embedded or otherwise fixed pipe, rod or other stock of regular shape, preparatory to cutting, welding and like procedures;

Fourth, to provide a contour marker and layout tool which is ideally suited to mark material symmetrically about a fixed line, upon which line the tool can often be firmly held and the adjustable head moved from one side to the other;

Fifth, to provide a contour marker and layout tool of the character described in which the protractor may be set and locked and while locked the head may be adjusted in another plane;

Sixth, to provide a contour marker and layout tool which will normally position itself on either round or otherwise regularly shaped material and may be used to describe a wide variety of angles, the pivoted scriber arms allowing the complete encirclement of small stock with one setting; and

Seventh, to provide an apparatus of this class which is simple and practicable to manufacture, sturdy, compact and convenient to store and generally efficient in service.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a plan view of my contour marker and layout tool, the protractor and scriber arms being set at an angle of 90° relative to the positioning support; Fig. 2 is a center sectional view of my invention taken on a line 2—2 in Fig. 1 to show the protractor locking means and the holding spring for the adjustment ratchet head; Fig. 3 is a schematic view of my invention operatively located on a portion of round stock which represents the work to be marked; and Fig. 4 is a similar fragmentary view showing my device operatively positioned on square stock.

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Similar characters of reference refer to similar or identical parts and portions throughout the several views of the drawings:

The positioning support 1, barrel 2, adjustable ratchet head 3, holding spring 4, protractor 5, protractor locking plunger 6, scriber arms 7, 8 and 9, marker holder 10, marker 11 and pointer 12 constitute the principal parts of my invention.

The positioning support 1 acts as a base for the tool and is provided in the form of a short length of angle iron with straight edges adapted to contact the stock or work as represented at A in Fig. 3 and at B in Fig. 4.

Secured rigidly to the positioning support 1 is the barrel 2 which is fitted at one end with the hollow externally stepped member 2a secured to said barrel 2 by a set screw 2c, and closed at the other end by a similarly stepped member 2b secured to the barrel 2 by a set screw 2d and this member 2b is notched or toothed as at 2e in Fig. 1.

This toothed or ratchet portion 2e is operatively associated with the adjustable ratchet head 3 which has a bifurcated portion 3a adapted to mount the protractor 5, tear drop holes or sights 3b on both sides to facilitate the reading of the protractor, a ratchet portion 3c and a relatively long hollow spindle 3d adapted to fit snugly within the barrel members 2b and 2a and extending beyond the end of the barrel 2, this extending portion 3e being internally threaded.

The holding spring 4 is mounted between the barrel portion 2b and spring retainer 4a which is secured on the spindle 3d by a snap ring 4b. It will be seen that this construction allows the ratchet head 3 to be disengaged from the ratchet portion 2b by compressing the spring 4.

The protractor is essentially a thick semi-circular plate with calibration markings on the periphery of both sides and pivoted as at 5b. The side of the protractor remote from the calibrated side is centrally drilled to receive the pivot pin 5b and is of proper dimension to fit snugly within the bifurcated portion 3a.

The protractor locking plunger is a short cylinder slidably secured within a hole drilled centrally of the adjustable ratchet head. The actuating rod 6a is adjustably mounted within the hollow spindle portion 3d to engage the plunger 6, as illustrated in Fig. 2. The outer end of this actuating rod 6a is screw-threaded as at 6b to engage an internally threaded portion 3e of the ratchet head spindle portion 3d and a thumb knob 6c is provided to facilitate the turning of this rod 6a when it is desired to lock the protractor.

The scriber arms 7, 8, and 9 are pivotally secured together as at 8a and the assembly is

pivotally secured to the protractor 5 as at 7a or in any other suitable manner to allow the scriber arms a full three hundred and sixty degrees rotation. At the outer end of the scriber arm 9 there is provided a marker holder 10 which may be of any suitable construction such as I have illustrated with the spring mounted box clamp 10a and thumb screw 10b all adapted to adjustably clamp the marker 11 in position on the end of the outer scriber arm 9.

At the end of the base 1, remote from the protractor, I provide a transversely drilled lug 1b to which is pivotally secured a pointer 12 which is bifurcated to facilitate the attachment thereof to the lug 1b by the pin 12a. This pointer is adapted to aid in aligning the base 1 with the work, especially when such work is flat and layout lines are used.

In use, my contour marker and layout tool is placed on the work A or B to be marked and the angle for subsequent cutting or other procedure is set upon the protractor 5, viewing the setting through the sight 3b. The scriber arms 7, 8 and 9 are then flexed to allow the marker 11 to be moved into marking contact with the work A. If the work is not very large the scriber arms may be moved to the opposite side of the work and the same angle marked all around the work without resetting the tool. If symmetrical angles are to be marked on opposite sides of the work A, the adjustable ratchet head 3 may be shifted to facilitate this type of marking. The adjustable head will also enable the operator to easily obtain angular markings on work not easily rotatable or on fixed structure which markings would be difficult or impossible to obtain with an instrument of this class without an adjustable head.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a contour marker and layout tool, the combination of a positioning support, a barrel secured thereto and provided with ratchet teeth, a longitudinally shiftable and rotatably adjustable ratchet head having teeth meshing with said teeth of said barrel, a holding spring in said barrel tending to force the teeth of said barrel into engagement with the teeth of said ratchet head, a protractor pivotally secured to said head, with one side passing through said head, and scriber arms pivotally secured to said protractor adjacent its pivotal mounting, and at right angles to its pivotal mounting.

2. In a contour marker and layout tool, the combination of a positioning support, a barrel secured thereto and provided with ratchet teeth, a longitudinally shiftable and rotatably adjustable ratchet head having teeth meshing with said teeth of said barrel, a holding spring in said barrel tending to force the teeth of said barrel into engagement with the teeth of said ratchet head, a protractor pivotally secured to said head, with one side passing through said head, and scriber arms pivotally secured to said protractor adjacent its pivotal mounting, and at right angles to its pivotal mounting, and a protractor lock associated with said head, with a portion extending through said barrel, arranged to lock said protractor in any predetermined position in relation with said head.

3. In a contour marker and layout tool, the combination of a positioning support, a barrel secured thereto, a longitudinally shiftable and rotatably adjustable ratchet head in cooperative relation with said barrel, a holding spring mounted in said barrel arranged to keep said ratchet head in retractive engagement with said barrel, a protractor pivotally secured to said head, said head having a bifurcated portion in which said protractor is pivotally shiftable, scriber arms pivotally secured to said protractor adjacent its pivotal mounting, and a protractor lock associated with said head to lock said protractor in any predetermined position, said protractor lock comprising a plunger frictionally engageable with the protractor, a tubular portion in said barrel aligned with said protractor and supporting said plunger therein and a rod having a threaded portion engaging said tubular portion of said head, so that turning said rod moves this rod into operative engagement with said plunger.

LEROY E. RIDGEWAY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
276,688	Hartley	May 1, 1883
605,763	Trunk	June 14, 1898
742,077	Sovelius	Oct. 20, 1903
1,660,616	James	Feb. 28, 1928
1,922,409	Wyss	Aug. 15, 1933
1,991,117	Porteous et al.	Feb. 12, 1935
2,095,479	Ridgeway	Oct. 12, 1937
2,257,291	Bemis	Sept. 30, 1941