Nov. 21, 1944. F. J. VIERLING 2,363,166

LAY-OUT INSTRUMENT

Filed May 22, 1943

Fig. 1

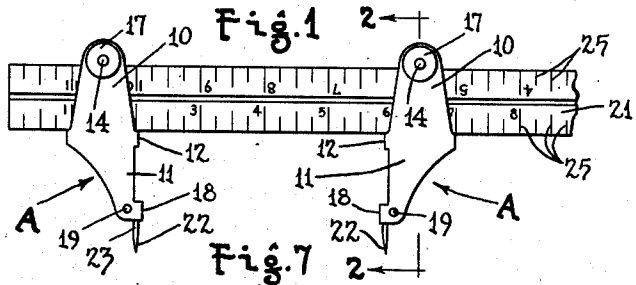


Fig. 2

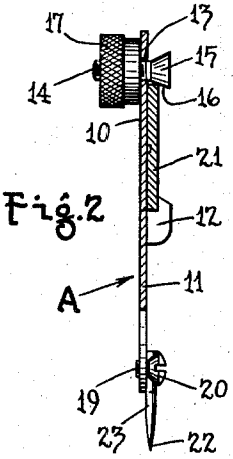


Fig. 7

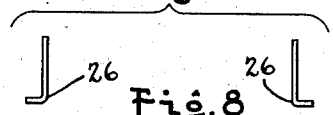


Fig. 8

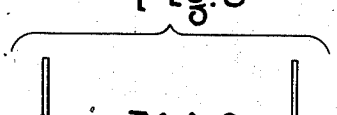


Fig. 9

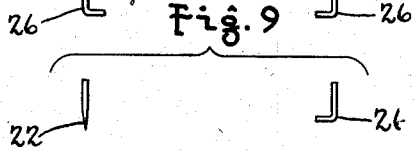


Fig. 3

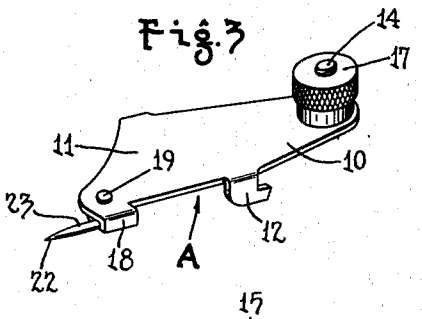


Fig. 6

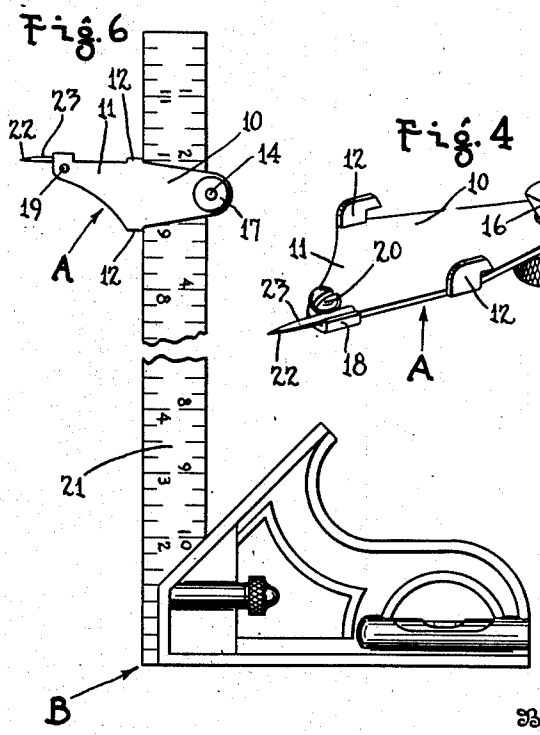


Fig. 4

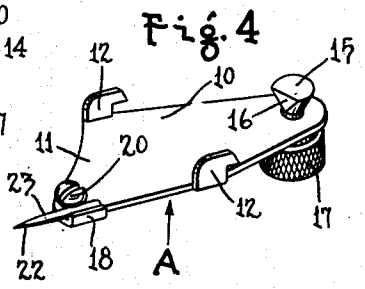
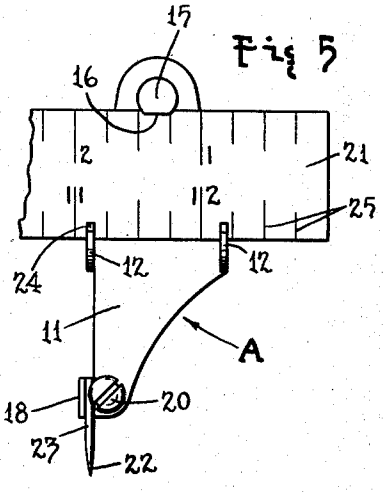


Fig. 5



Inventor

Frank J. Vierling

By Cowell & Lagaard

Attorneys

Patented Nov. 21, 1944

2,363,166

UNITED STATES PATENT OFFICE

2,363,166

LAYOUT INSTRUMENT

Frank J. Vierling, Minneapolis, Minn., assignor to M. M. Liederbach, Minneapolis, Minn.

Application May 22, 1943, Serial No. 488,044

2 Claims. (Cl. 33—158)

My invention relates to improvements in layout instruments for mechanics and other artisans and has for an object thereof to provide an exceedingly simple, durable and inexpensive tool, including an improved trammel-head construction adapting the tool for convenient and accurate use as a gauge, compass, caliper, divider and the like, it being a further object of the invention to supply trammel-heads for ready application, singly or in pairs, to standard beams, rules and the like commonly possessed by persons having occasion to use instruments of the instant nature.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing, Fig. 1 is a front elevational view of a form of instrument constructed in accordance with my invention; Fig. 2 is an enlarged sectional view taken on the line 2—2 of Fig. 1; Figs. 3 and 4 are perspective views in detail taken from the front and rear sides, respectively, of the "left" and "right" trammel-heads shown on the graduated beam or rule in Fig. 1; Fig. 5 is a rear elevational view illustrating in detail a portion of a graduated beam or rule with a trammel-head mounted thereon, such as the "left" trammel-head shown in Fig 1; Fig. 6 is an elevational view illustrating the application of a single trammel-head to the rule of a combination square; Figs. 7, 8 and 9 are elevational views of points variously constructed and arranged to suit the instrument to different uses.

Reference being had to the drawing, wherein similar parts are designated by similar reference characters throughout the several views, it will be understood that the present invention embraces an improved construction in trammel-heads, which will be furnished in pairs along with a beam, rule, straight edge or other like instrumentality, or which will be furnished for application to such instrumentalities of standard construction commonly possessed by mechanics and other artisans.

The companion trammel-heads of a pair are symmetrically formed to provide "left" and "right" structures A enabling the points carried thereby to be brought closely together and, at the same time, minimizing the bulk of the trammel-heads.

Each trammel-head of a pair being of the same essential construction as the other, a description of one will apply, generally, to the other. In my improved trammel-head A, a tapered body 10, with an internal leg 11 extending from the base thereof, is struck from sheet metal. The body 10 has at its base a pair of ears in the form of hooks 12, the same being turned rearwardly of the body into planes at right angles thereto. One of said hooks 12 is located at the inner edge of the body and the other at the outer edge thereof, both hooks 12 opening toward the tip of the body 10 and being oppositely equally spaced from a medial line longitudinally of said body. Formed in the body 10 near the tip thereof and centered on said medial line is an opening 13. A headed clamp screw 14 slidably mounted in this opening has its head 15 at the rear of the body, said head being formed with a planiform cam surface 16 which, in the operative angular position of said clamp screw inclines therefrom rearwardly and toward said hooks 12. On the screw 14 at the front of the body 10 is a clamp nut 17 for shifting said screw axially of said body.

The major portion of the leg 11 and particularly the extremity of said leg is disposed inwardly of said line medially and longitudinally of the body 10, said leg having at its extremity a rearwardly turned flange 18 paralleling the inner hook 12 and in near alignment therewith. Threaded in said leg 11 from the rear thereof and at a locality adjacent said flange 18 is a set screw 19 having a frusto-conical head 20. Points of various formation, more fully hereinafter described, are removably applicable to the leg 11, the butt or shank of a point to be used being adapted to be wedged between said flange 18 and the head 20 of the set screw 19.

In applying a trammel-head A to a beam or the like, as at 21 (Figs. 1, 2 and 5), the body 10 of the trammel-head is backed against one face of such beam with one marginal portion of the beam received in and overreached by the hooks 12 and the other marginal portion of said beam overreached by the cam surface 16 of the clamping screw 14. Said hooks 12 and the cam surface 16 of said screw 14 cooperate to guide the trammel-head A along the beam 21 into desired position thereon lengthwise thereof, the clamp nut 17 on said screw 14 serving axially to shift the clamp screw in the body 10 and cause the clamping of said cam surface 16 and said hooks 12 against opposite edges of said beam.

Fig. 1 of the drawing shows needle points 22 applied to "left" and "right" trammel-heads A mounted on the graduated beam or rule 21. The needle point 22 in each trammel-head A is axially straight and the shank or butt 23 thereof, clamped between the flange 18 and tapered head of the set

screw 19, is of such diameter that the axis of the point 22 lies in a plane paralleling and passing through the inner hook 12 of the trammel-head. As shown in Fig. 5, this hook 12, at its tip and along the rear edge thereof and in the plane of the axis of the point 22, is formed with a reading-line 24. Said reading-line 24 is juxtaposed relative to scale-lines 25 overreached by said inner hook 12 and formed, as usual, on the marginal portions of the beam or rule 21. Thus, by reference to the reading-line 24 on the trammel-head A in relation to the scale-lines 25 on the beam or rule 21, a user of the instrument will be apprised of the exact relationship of the sharp extremities of the points 22 with respect to said scale-lines. Obviously, the trammel-heads A, with needle points 22 applied thereto, conditions the instrument to use as a compass or divider.

Figs. 7 and 8 show L-shaped points 26 for application to "left" and "right" trammel-heads A, the two points in Fig. 7, relatively disposed as shown therein, conditioning the instrument for use as an inside caliper, and the two points 26 in Fig. 8, relatively disposed as therein shown, fitting the instrument for use as an outside caliper.

Fig. 9 shows a morphidites combination of needle point 22 and L-shaped point 26.

A single trammel-head A, "right" or "left," as desired, may be applied, as shown in Fig. 6, to the rule 21 of a combination square B, resolving the square to use as a height gauge.

Changes in the specific form of my invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

1. In an instrument of the character described, a trammel-head for application to a beam, said trammel-head comprising an elongated structure struck from sheet metal and consisting of a body with a leg extending from the base thereof, said body having at its base a pair of ears in the form of hooks turned rearwardly of the body into planes at right angles thereto, said hooks opening toward the tip of the body and being equally spaced from a medial line longitudinally thereof, said body being formed with an opening near its tip centered on said medial line, a headed clamp screw slidable in said opening and having its head at the rear of said body and formed with a cam surface, said body being adapted to be backed against one face of said beam with a marginal portion of the beam received in and overreached by said hooks and with said cam surface of the clamp screw overreaching the other marginal portion of the beam, said hooks and cam surface cooperating to guide the trammel-head along the beam, a clamp nut on said clamp screw for axially shifting the same in said body to cause the clamping of said cam surface and hooks oppositely against said beam, a point, and means on said leg for removably attaching said point thereto.

2. In an instrument of the character described, a trammel-head for application to a beam, said trammel-head comprising an elongated structure struck from sheet metal and consisting of a tapered body with a leg extending from the base thereof, said body having at its base a pair of ears in the form of hooks turned rearwardly of the body into planes at right angles thereto, said hooks opening toward the tip of the body and being disposed at opposite sides of a line extending longitudinally of said body, said body being formed with an opening near the tip thereof, a headed clamp screw slidable in said opening and having its head at the rear of said body and formed with a cam surface, said body being adapted to be backed against one face of said beam with a marginal portion of the beam received in and overreached by said hooks and with said cam surface of the clamp screw overreaching the other marginal portion of the beam, said hooks and cam surface cooperating to guide the trammel-head along the beam, a clamp nut on said clamp screw for axially shifting the clamp screw in said body to cause the clamping of said cam surface and hooks oppositely against said beam, the extremity of said leg being formed with a flange turned at an angle relative thereto, said leg having a set screw threaded thereinto adjacent said flange, said set screw having a frusto-conical head, and a point removably applicable to said leg, the butt of said point being adapted to be wedged between said flange and the head of said set screw.

FRANK J. VIERLING.