No. 813,095. PATENTED FEB. 20, 1906.

J. F. HOTTMAN.

TRAMMEL.

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Fig. 1.

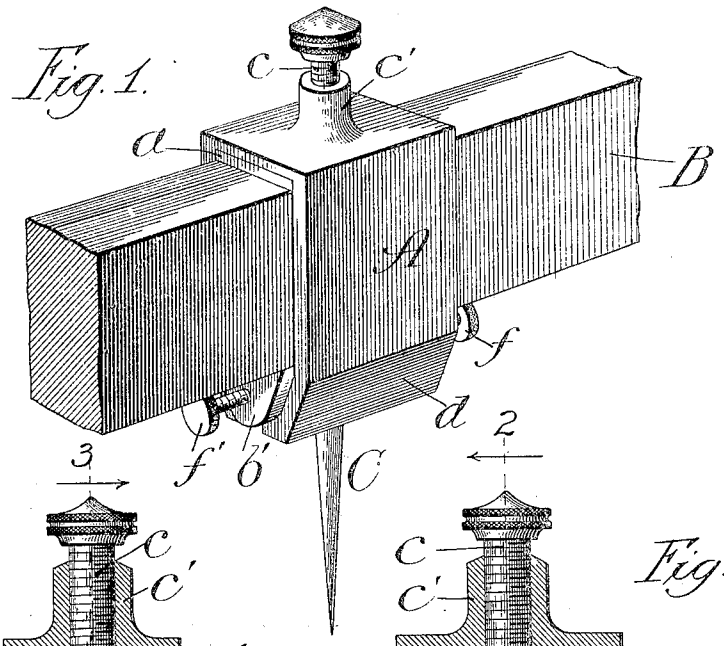


Fig. 2.

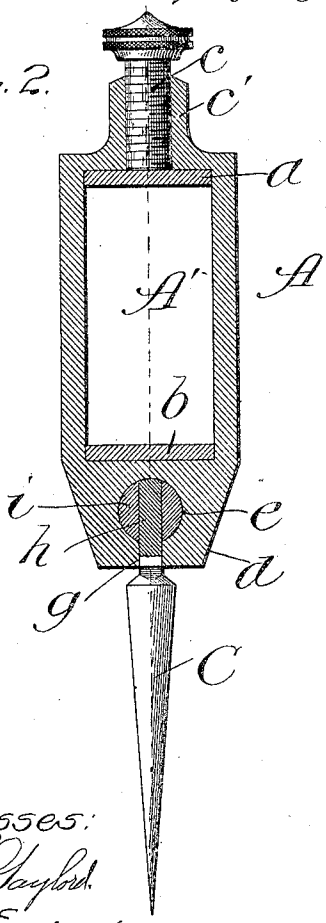
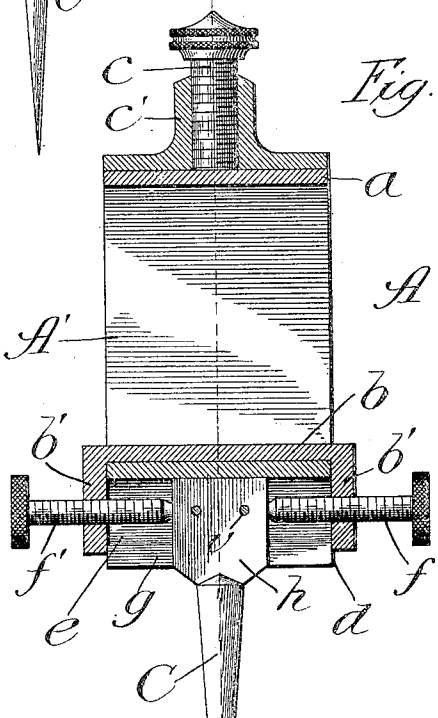


Fig. 3.



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TRAMMEL.

No. 813,095. Specification of Letters Patent. Patented Feb. 20, 1906.

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To all whom it may concern:

Be it known that I, JOHN F. HOTTMAN, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented a new and useful Improvement in Trammels, of which the following is a specification.

My invention relates to an improved construction of trammel or beam-compass; and it relates particularly to means for adjustably supporting the headed trammel-point.

The more important objects of my invention are to provide a simple and compact construction of adjustable trammel-point which shall render the implement comparatively cheap to manufacture and adapt the point to be accurately alined in any position to which it is moved by sliding it on the beam and to be protected against injury from hard usage and rigidly resistant to the torsional strains to which it is subjected in use.

In the accompanying drawings, Figure 1 is a perspective view of my improved trammel on its beam, of which a broken section is shown; Fig. 2, a section taken at the line 2 on Fig. 3 and viewed in the direction of the arrow, and Fig. 3 a section taken at the line 3 on Fig. 2 and viewed in the direction of the arrow.

A is the body of the implement in its preferred form of a socket containing a rectangular opening A′ to conform to the cross-sectional shape of the beam B, releasably confined in the socket, through which it passes between upper and lower bearing plates or washers *a* and *b* therein by a set-screw *c*, working in a suitable bearing *c′* on the top of the socket against the upper plate to distribute the clamping strain of the set-screw uniformly over the areas of the beam covered by the plates. The thickened base *d* of the socket has formed through it longitudinally a cylindrical chamber *e*, and the ends of the plate *b* are extended downward over the ends of this chamber as ears *b′* and form bearings for set-screws *f f′*, which enter the chamber *e*, alinningly in contrary directions, for the purpose hereinafter explained. A rectangular slot *g* is provided longitudinally and centrally through the bottom of the base *d* to open into the chamber *e*.

C is the trammel-point, having a rectangular head *h* of a thickness adapting it to conform to the width of the slot *g*, which it fits closely, the head entering the chamber *e*, wherein it is adjustably confined between the screws *f* and *f′* and being rigidly secured, as by rivets (represented at *v* in Fig. 3) between bars *i i* of arc shape in cross-section conforming to the cylindrical shape of the chamber *e*, the diameter of these bars with the head proper, *h*, rigidly confined between them, conforming to that of the chamber to produce a close fit therein. The chamber *e* should be drilled in the first instance somewhat smaller than the required diameter and afterward reamed out to the proper size to render it smooth and uniform throughout its length, and the slot *g* may be sawed or milled through the socket-base after the chamber *e* is completed. The bars *i i* may be formed by sawing or milling lengthwise through a cylindrical steel bar of the diameter of the chamber *e*, and thereby cutting away equally along opposite sides of its longitudinal center a thickness of the metal corresponding to that of the head *h*. The point C, including the head *h*, with its bars *i*, may be made complete in one piece by drop-forging and milled to adapt the bars to fit the slot *g* and chamber *e*.

To assemble the parts, the head *h* on the bars *i* is introduced into the chamber *e* and slot *g* at one end of the body A when the plate *b* is applied in place, and the screws *f f′* are inserted in the ears *b′* to bear against the head and immovably hold the point in any position of adjustment attained by moving the head lengthwise of its housing-chamber.

The construction of the sliding head includes the bars *i*, and it affords a large extent of bearing-surface, which increases the rigidity of the point C and reduces to the minimum wear on the head and consequent inaccuracy in setting the point. Moreover, the construction permits the head to be contained and housed in the body of the trammel, wherein it is protected by the metal surrounding it against injury from hard usage and enables the point to be rendered rigidly resistant to the torsional strains to which the implement is subjected in use. The adjusting-screws *f* and *f′* serve to hold and lock the sliding head against any endwise movement or up-and-down displacements in case of wear on the cylindrical head, which is the only part of the implement that shows wear by use, and the snug fit in the slot *g* of that portion of the head which passes through it prevents any turning movement of the point on the longitudinal axis of the head.

With my improved construction of trammel it is not necessary in the use of the implement that the beam B present a perfectly straight edge.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a trammel, the combination of the body, adapted to be adjustably supported on the beam, provided with a chamber and a slot communicating therewith, a trammel-point having a head passing through said slot into said chamber and snugly fitting in the latter, set-screw bearings at opposite ends of said chamber, and set-screws in said bearings between which said head is adjustably confined.

2. In a trammel, the combination of the body, adapted to be adjustably supported on the beam, having a cylindrical chamber and a rectangular slot communicating therewith, a trammel-point having a head passing through said slot into said chamber and provided therein with side bars rendering the head of cylindrical shape, and set-screws working in bearings on said body and between which said head is adjustably confined.

3. In a trammel, the combination of a socket through which the beam passes, provided with means for fastening it in adjusted position on the beam, and having a cylindrical chamber in its base with a rectangular slot extending through said base into the chamber, a trammel-point having a head passing through said slot into said chamber and of cylindrical shape in the latter, and set-screws entering said chamber and between which said head is adjustably confined.

4. A trammel comprising, in combination, a socket containing upper and lower bearing-plates and through which the beam passes between said plates, a set-screw on the socket working against the upper plate, a cylindrical chamber in the base of the socket and a rectangular slot extending through said base into the chamber, a trammel-point having a head passing through said slot into the chamber and provided therein with side bars rendering the head cylindrical, ears extending from the lower bearing-plate over the ends of said chamber, and set-screws, between which said head is adjustably confined, working in said ears.

JOHN F. HOTTMAN.

In presence of—
LOUIS C. KOLFENBACH,
ROBERT E. HAGERTY.