(No Model.)

E. LINDNER.

COMBINED TRAMMEL AND CALIPERS.

No. 497,802. Patented May 23, 1893.

Fig. 3.

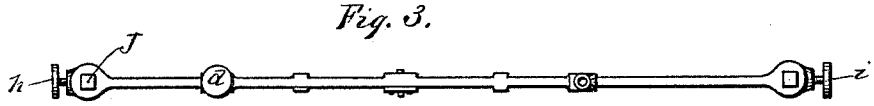


Fig. 1.

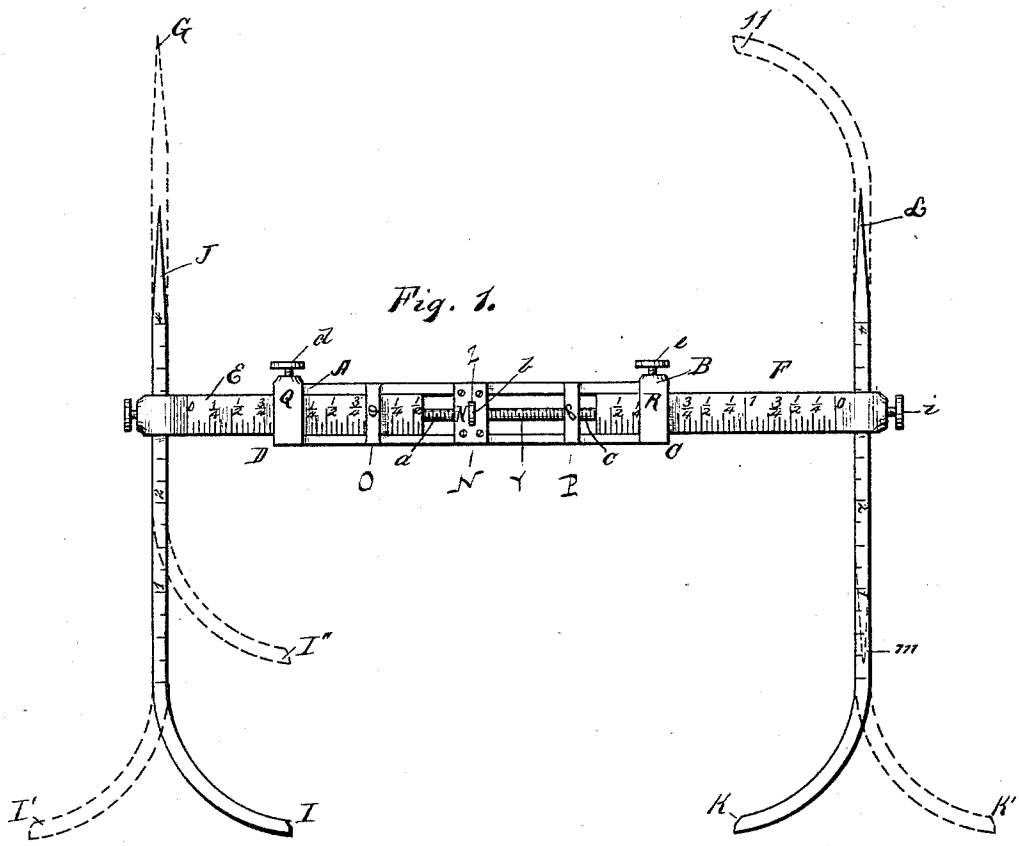
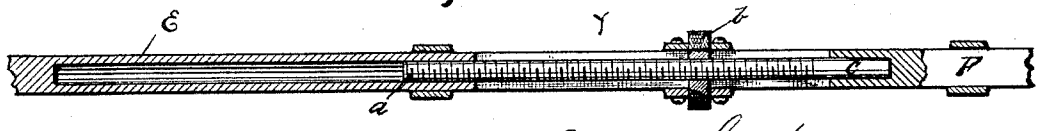


Fig. 2.



Witnesses:
W. C. Oster.
P. F. O'Neil

Emeram Lindner Inventor.

By his Attorney,
A. E. Kling

UNITED STATES PATENT OFFICE.

EMERANN LINDNER, OF AKRON, OHIO.

COMBINED TRAMMEL AND CALIPERS.

SPECIFICATION forming part of Letters Patent No. 497,802, dated May 23, 1893.

Application filed December 5, 1892. Serial No. 454,190. (No model.)

To all whom it may concern:

Be it known that I, EMERANN LINDNER, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a new and useful Combination Trammel and Calipers, of which the following is a specification.

My invention has relation to improvements in that class of calipers used by artisans, wherein it is desired to combine in a single tool the benefits of many without the corresponding increase in the number of parts. And the objects of my invention are to produce calipers which shall be strong, serviceable and accurate, yet capable of sensitive adjustment and which by a slight interchange of parts may be utilized as an entirely different class of calipers and further to combine with these a trammel suitable for mechanics' or artisans' use.

To the aforesaid objects my invention consists in the peculiar and novel construction, combination and arrangement of parts hereinafter described, and then specifically claimed, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings in which similar reference letters indicate like parts in the different figures, Figure 1, represents a side elevation of my improved calipers. Fig. 2, is a central longitudinal section of the main frame. Fig. 3, is a plan view.

In the drawings A, B, C, D, is a hollow frame preferably of metal and generally made with open sides, leaving cross-bars, O, N, and P, and end pieces Q, R, all made integral. In suitable bearings in the cross-bar, N, and revolubly mounted is a nut Z, through the center of which and concentric therewith is a shaft, Y, and the ends whereof are screw-threaded. Sliding in the frame, A, B, C, D, are bars, E, F, the inner ends of which are tapped to engage the ends of the screw-threaded shaft, Y, and to be drawn in or forced out by the turning of the shaft, Y, by means of the nut, Z. The outer ends of the bars, E, F, are perforated to receive the trammel points or caliper legs. The arms, F, are held firmly wheresoever desired in the frame, A, B, C, D, by set screws, *d*, *e*, and the trammel arms by set screws, *h*, *i*, placed on the ends of bars, E, F. By slight change of the caliper legs and trammel points this invention can be used as inside, outside and hermaphrodite calipers as well as a trammel.

What I desire to secure by Letters Patent is—

1. In a combined trammel and calipers the combination of a central frame, having a revolubly mounted nut and screw-threaded shaft arranged to simultaneously actuate sliding bars in said frame; the ends of said bars perforated to receive trammel points or caliper legs, said legs having one pointed and one curved end all combined substantially as shown and described.

2. In a combined trammel and calipers, the combination of a hollow skeleton frame, having a screw-threaded shaft and revoluble nut mounted therein, said shaft arranged to simultaneously actuate, trammel point bearing bars sliding in said frame, said bars adapted to be retained in place by set screws placed on said frame, all constructed and arranged substantially as shown and described, and for the purpose specified.

EMERANN LINDNER.

In presence of—
P. H. HOFFMAN,
J. V. WELSH.