W. H. MINER.

Calipers.

No. 143,584. Patented Oct. 14, 1873.

Fig 1

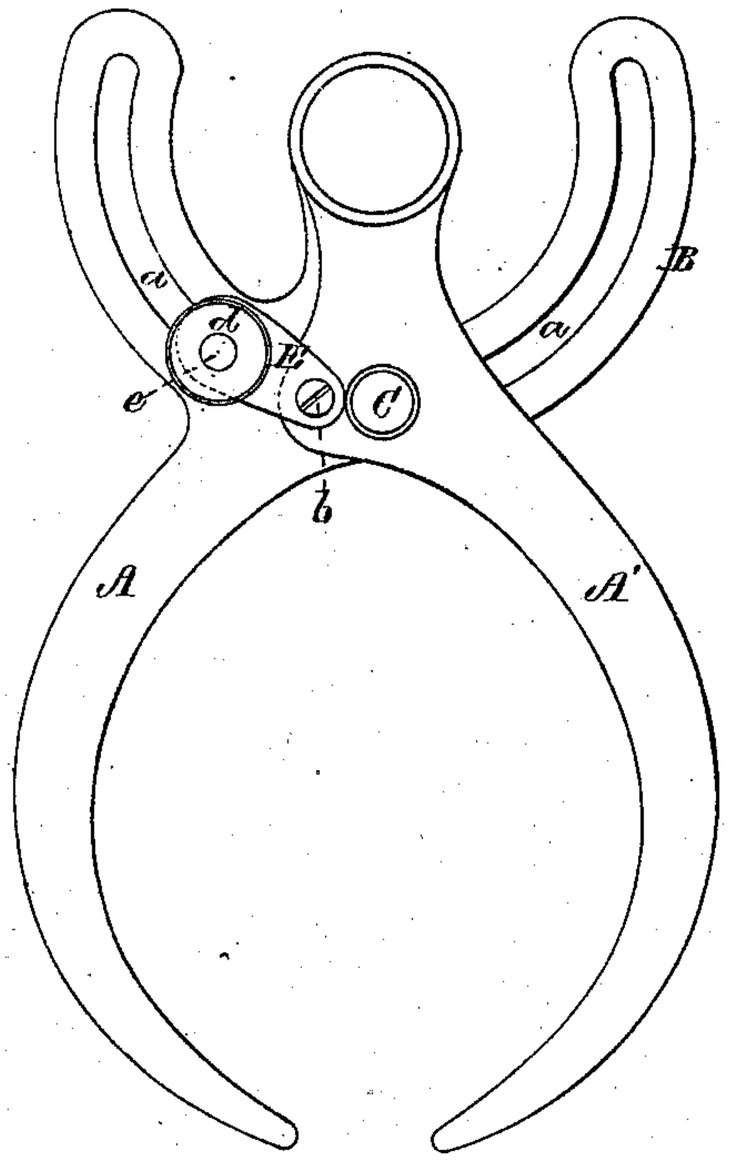


Fig. 2.

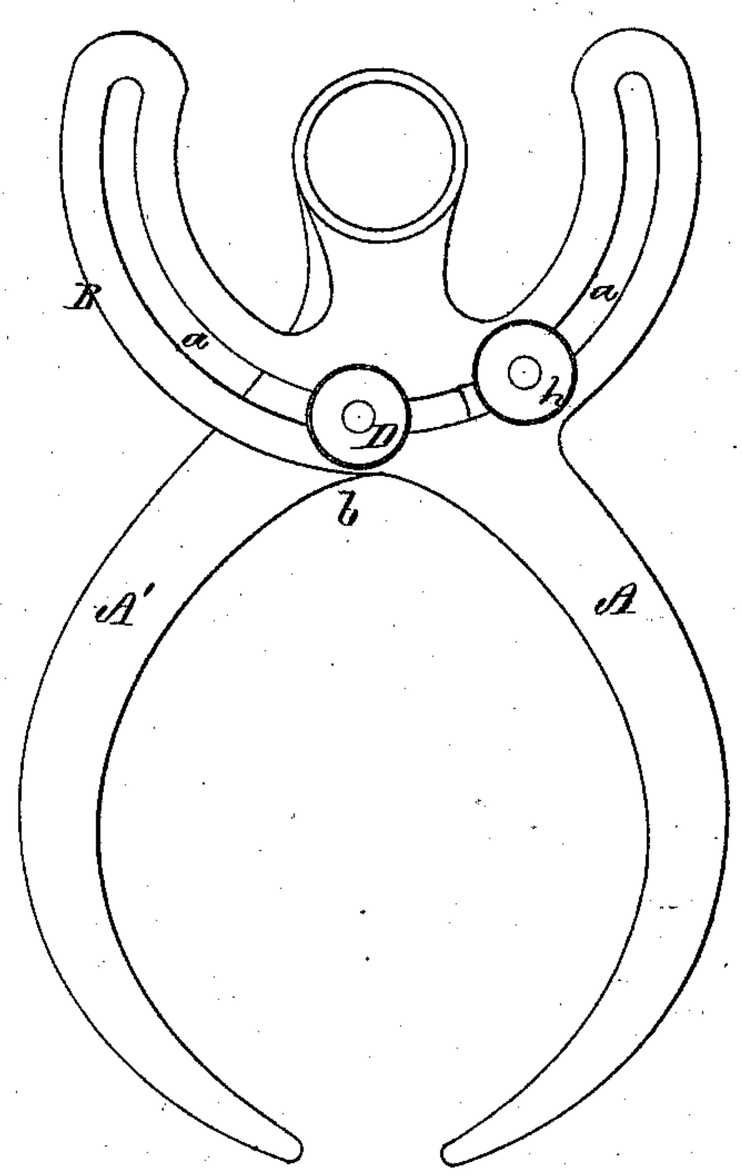


Fig. 3.

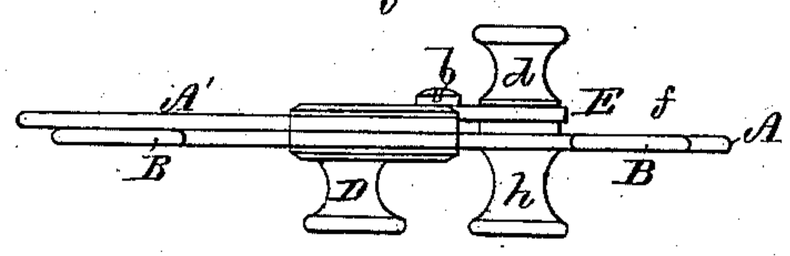


Fig. 5.

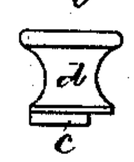


Fig. 4.

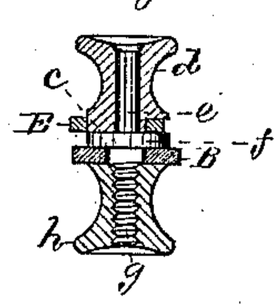
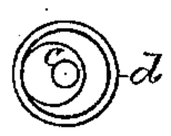


Fig. 6.



Witnesses.

S. N. Pipen.

L. N. Möller.

William H Miner.

by his attorney.

R. H. Eddy

UNITED STATES PATENT OFFICE.

WILLIAM H. MINER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CALIPERS.

Specification forming part of Letters Patent No. **143,584**, dated October 14, 1873; application filed August 13, 1873.

To all whom it may concern:

Be it known that I, WILLIAM H. MINER, of Boston, of the county of Suffolk, of the State of Massachusetts, have invented a new and useful Improvement in Calipers; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a rear view, and Fig. 3 a top view, of calipers of my improved construction. Fig. 4 is a transverse section taken through the eccentric, its pivot, and the clamp-nut thereof. Fig. 5 is a side view, and Fig. 6 an inner-end view, of the eccentric and its carrier or head.

In the said drawings the two legs A A′ of the calipers are represented as pivoted together, and with one of them formed or provided with a semicircularly-curved and slotted limb, B, the slot being shown at *a*. These legs are furnished with a clamp-screw, C, and a nut, D, such screw going through one of the legs and the curved slot, and into the nut. On turning up the latter sufficiently, the two legs may be clamped together. In such respects the calipers do not materially differ from others long known and used.

In carrying out my invention I have provided the calipers with a peculiar mechanism for effecting accurate adjustment of the extremes of the legs in distance from each other. The first part of such mechanism consists of a flat arm, E, pivoted to the lesser leg of the calipers, the pivot being shown at *b*. This arm has a circular hole through it to receive and fit it to a corresponding eccentric, *c*, formed upon and disposed eccentrically with the inner end of a rotary carrier or head, *d*, which, with the eccentric, is arranged to turn upon a pivot or arbor, *e*. The said arbor is provided at its middle with a shoulder, *f*, and goes through the slot of the curved limb, and, when projecting in rear of such, is provided with a male screw, *g*, to receive a screw-nut, *h*, all being as shown. Having loosened each of the clamp-nuts and moved the caliper-legs into positions in which their points or lesser ends may be a distance apart approximating to that at which it may be desirable to set or adjust them, we next should turn the arbor clamp-nut *h* hard up, so as to clamp the arbor *e* to the limb B. Next, by taking hold of and revolving the rotary head *d*, so as to revolve the eccentric, the caliper-leg pivoted to the arm E may be moved and accurately adjusted with reference to the other leg, after which, if desirable to clamp the legs in position in order to prevent accidental movement of them, either nearer to or farther apart from each other, or accidental rotation of the eccentric, we have only to set up the clamp-nut D, this clamp-nut constituting a useful auxiliary to the adjustment mechanism.

I am aware that calipers and compasses, especially those termed "proportional" and "beam compasses," have been provided with tangent-screws, or mechanism for effecting the accurate adjustment of their points asunder. I therefore make no claim to such in the abstract.

I claim—

In the calipers as described, the flat arm E, the rotary eccentric *c*, and head *d*, the arbor *e*, the shoulder *f*, the screw *g*, and nut *h*, arranged and combined together as set forth, and applied to one of the caliper-legs A A′, and also to the slotted limb B of the other, all substantially in manner and to operate as specified, whether the calipers be provided with or be without the clamp-screw C and nut D, arranged with them as explained.

WILLIAM H. MINER.

Witnesses:

R. H. EDDY,

J. R. SNOW.