

(No Model.)

F. SPALDING.
CALIPERS.

No. 591,363.

Patented Oct. 5, 1897.

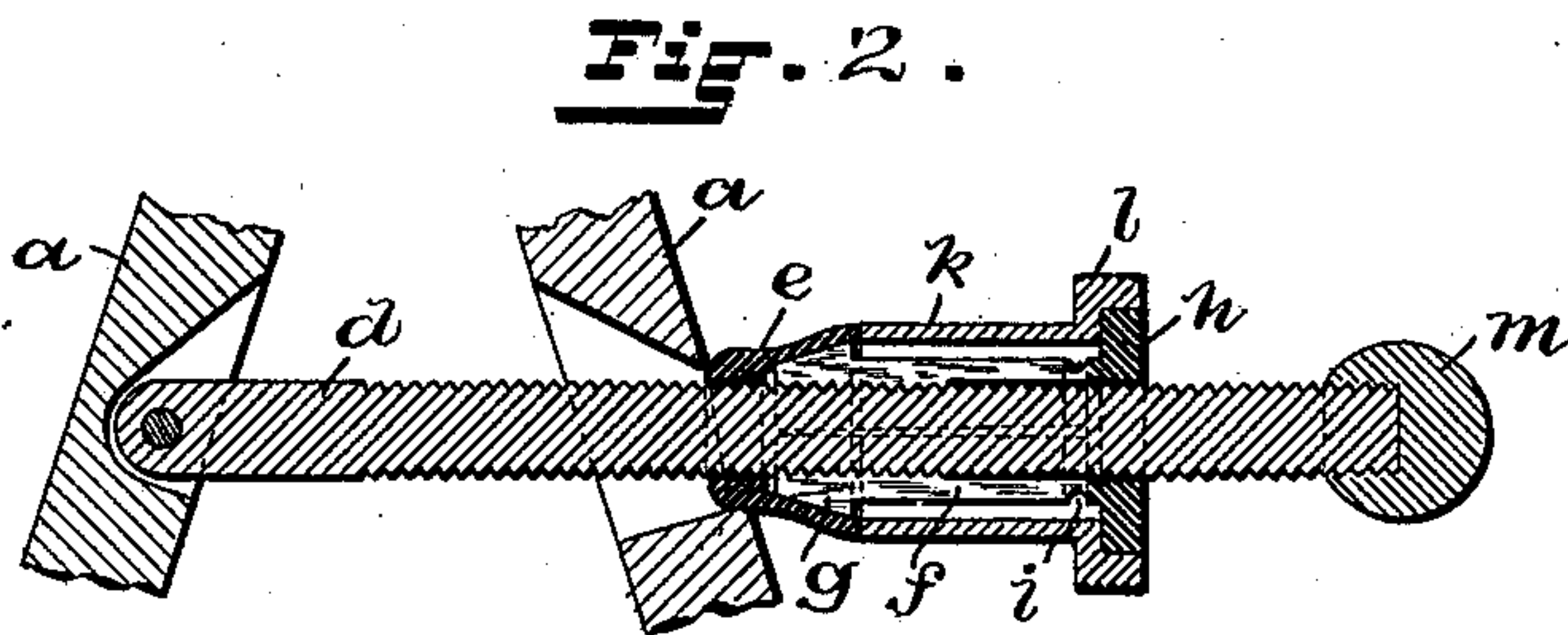
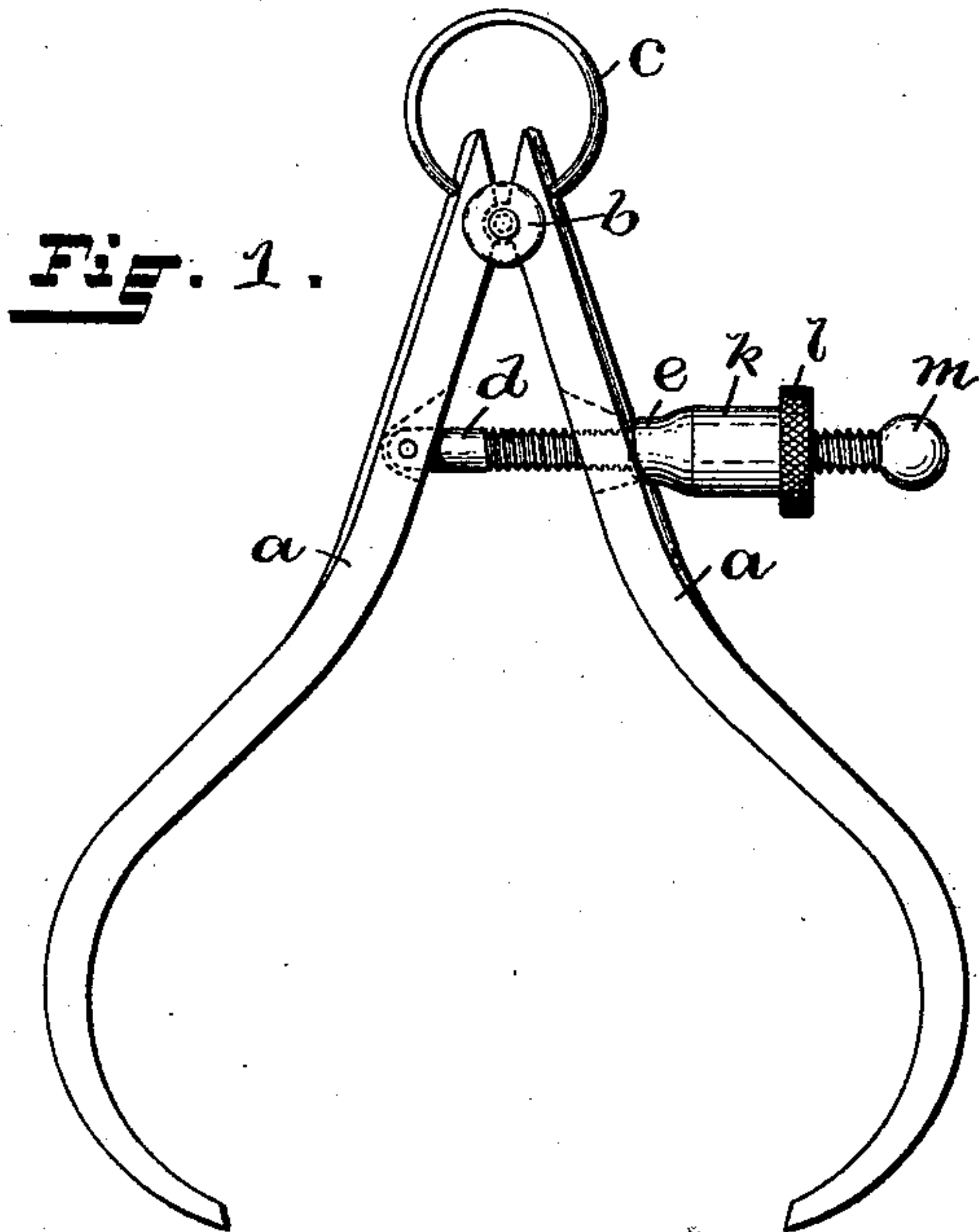


Fig. 3.

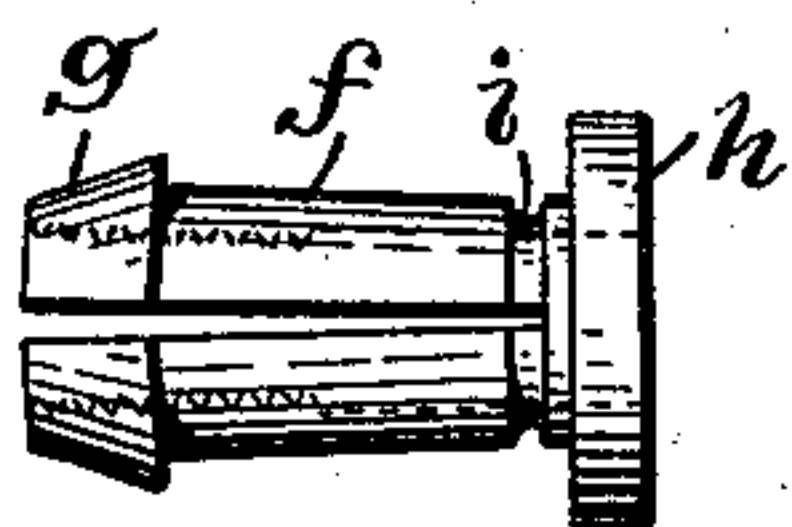


Fig. 4.

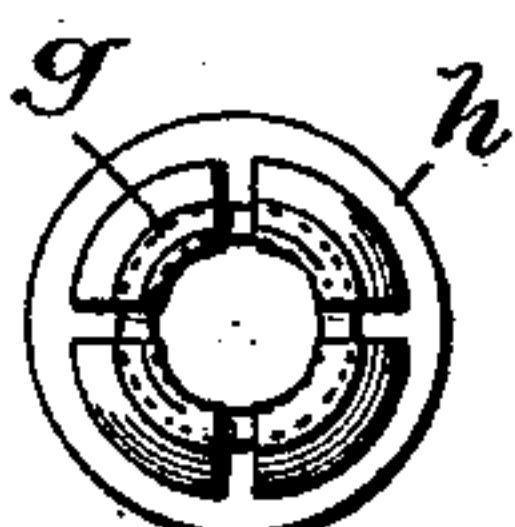


Fig. 5.

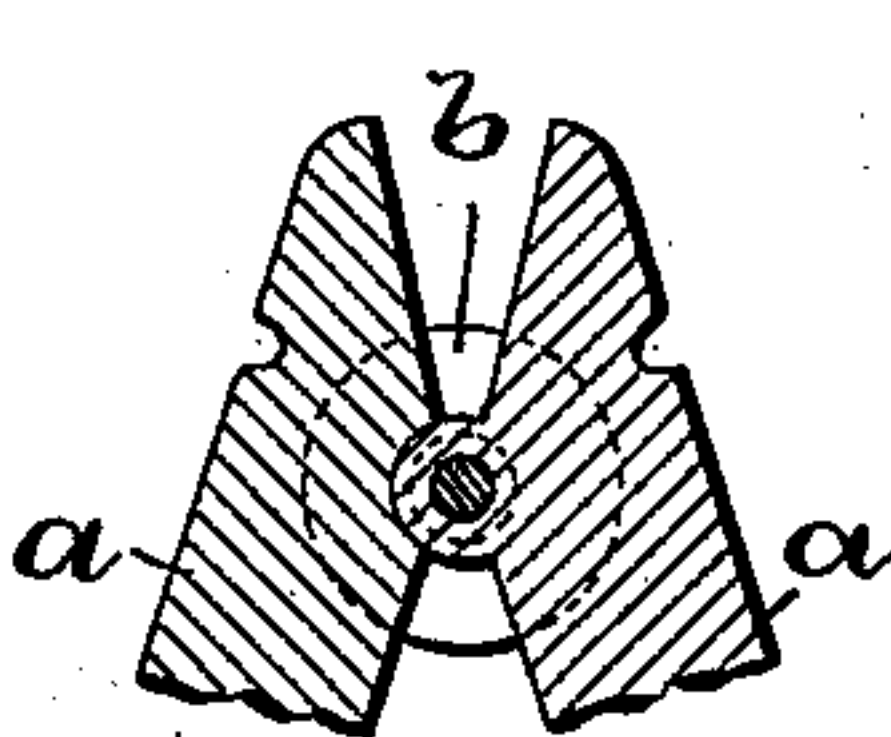
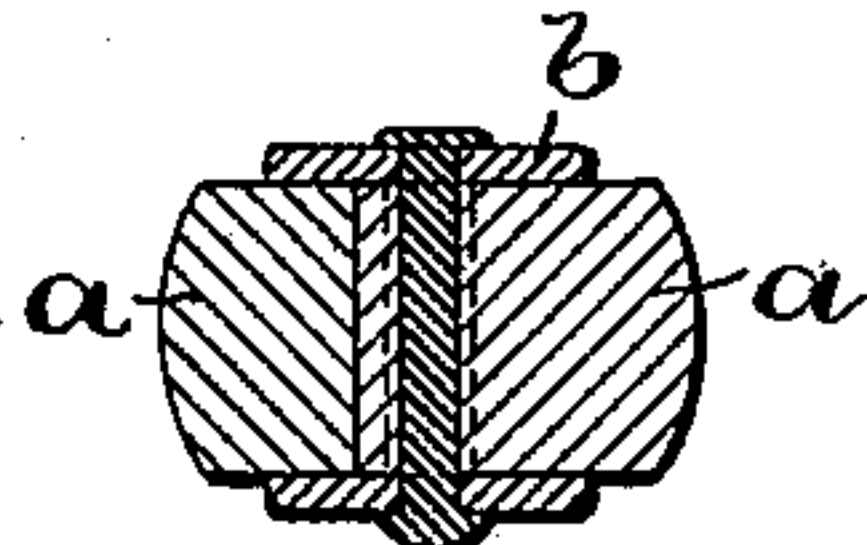


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK SPALDING, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
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CALIPERS.

SPECIFICATION forming part of Letters Patent No. 591,363, dated October 5, 1897.

Application filed May 6, 1897. Serial No. 635,360. (No model.)

To all whom it may concern:

Be it known that I, FRANK SPALDING, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Calipers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

The invention has reference to an improvement in spring-calipers in which the legs are forced apart by the action of a spring and are adjusted by a thumb-nut in screw-threaded engagement with a rod pivotally secured to one of the legs.

The invention consists in the peculiar and novel construction of the thumb-nut, whereby the adjustment of the calipers is facilitated, as will be more fully set forth hereinafter.

Calipers have to be so often adjusted and frequently to greatly-varying distances that the time required to turn the thumb-nut on the screw-threaded rod connecting the two legs of the calipers forms a considerable part of the employee's time. To avoid this loss of time, the thumb-nut has been made in the form of a sleeve, on which jaws provided with screw-threads were pivoted and arranged to slide on the screw-threaded rod from point to point. By engaging the jaws with the screw-thread the final adjustment was then made. In these prior devices the adjustment was not as convenient as is desirable and the longitudinal joints in the thumb-nut were objectionable in use.

The object of my invention is to avoid these defects and produce a rapidly-adjustable nut more convenient in use and better adapted for minute adjustment.

Figure 1 is a side view of a spring-caliper provided with my improved adjusting thumb-nut. Fig. 2 is a sectional view showing the screw-threaded rod and the improved thumb-nut in connection with two legs of a caliper.

Fig. 3 is a side view of the internally-screw-threaded split nut, and Fig. 4 is an end view of the same. Fig. 5 is a vertical section, and Fig. 6 a transverse section, of the hinged end of the caliper-legs.

In the drawings, *a a* indicate the two legs of the calipers; *b*, the hinged connection formed

by a convex projection on one leg and a concaved seat on the other. A pin extends through the convex projection, and two washers, one on each side of the legs, are secured together by the pin. *c* indicates a ring-spring seated in notches formed on the outside of the legs *a a* above the hinged joint. The screw-threaded rod *d* is pivotally secured at one end to one leg and extends through a hole in the other leg. The conical cup *e*, rounded at its smaller end, slides freely over the screw-thread of the rod and bears against the leg *a*. The split nut *f* is internally screw-threaded at the end *g*. The other portion of this end is conical. Close to the flange *h* the split nut is provided with the groove *i*. The nut *f* is split into four equal parts, as is shown in Fig. 4, and is split close up to the flange *h*, which flange is solid. A hole slightly larger than the screw-threaded portion of the rod *d* extends through the nut *f* from the screw-threaded end *g* through the flange *h*.

The flange *h* is firmly secured in the end of the sleeve *k*, so as to turn with the same and the peripherically-milled flange *l*, by which the device is operated. The knob *m* is secured to the end of the screw-threaded rod *d* and prevents the accidental withdrawing of the adjusting device.

The operation of the adjusting device on the calipers is as follows: The spring *c*, pressing on the legs above the fulcrum, forces the lower ends of the legs apart. The conical cup *e* compresses the conical end of the split nut *f* and engages the same with the screw-thread of the rod *d*, and the end of the sleeve *k* bears against the end of the conical cup *e*. By turning the flange *l* the nut *f* turns on the screw-thread and the ends of the caliper-legs are brought closer together or allowed to spread farther apart and may be accurately adjusted. When a greater difference in adjustment is required, the legs are slightly compressed, whereby the cup *e* slides on the conical end *g* and allows the nut *f* to open and the nut with the sleeve *k* to slide on the screw-thread. By releasing the legs the spring-pressure forces the cup *e* again over the conical end *g*, and the final adjustment is made by turning the milled flange *l*. The sleeve *k* incloses and protects the split nut and facili-

tates the use of the device, as the exterior is smooth and round.

The split nut *f* is made of steel and is spring-tempered. The groove *i*, by diminishing the thickness of the metal at the end of the cut, increases the flexibility of the ends *g* of the nut. The sleeve *k* limits the expansion of the ends *g* and the breaking off of parts of the split nut *f* in handling.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a spring-caliper, the combination with the legs *a a* and the screw-threaded rod *d* 15 pivotally secured to one leg and extending through an opening in the other leg, of the conical cup *e*, the sleeve *k* having the peripherically-milled flange *l*, the split nut *f* having the conical end *g*, the groove *i* and flange *h*, 20 the flange *h* and the sleeve *k* being secured together, as described.

2. In a caliper, the combination with the legs *a a*, the fulcrum *b*, the spring *c* acting on the legs above the fulcrum, and the screw-threaded rod *d* pivotally secured to one leg 25 and extending through an opening in the other, of the conical cup *e*, the sleeve *k*, the peripherically-milled flange *l* on the sleeve, the longitudinally-split nut *f*, the conical end *g*, the groove and flange *h* integral with the 30 split nut *f*, said flange *h* secured to and rotating with the sleeve *k* and the knob *m* on the end of the rod; whereby the adjusting-nut may be rapidly moved longitudinally on the screw-threaded rod *d*, as described. 35

In witness whereof I have hereunto set my hand.

FRANK SPALDING.

Witnesses:

JOSEPH A. MILLER, Jr.,
M. F. BLIGH.