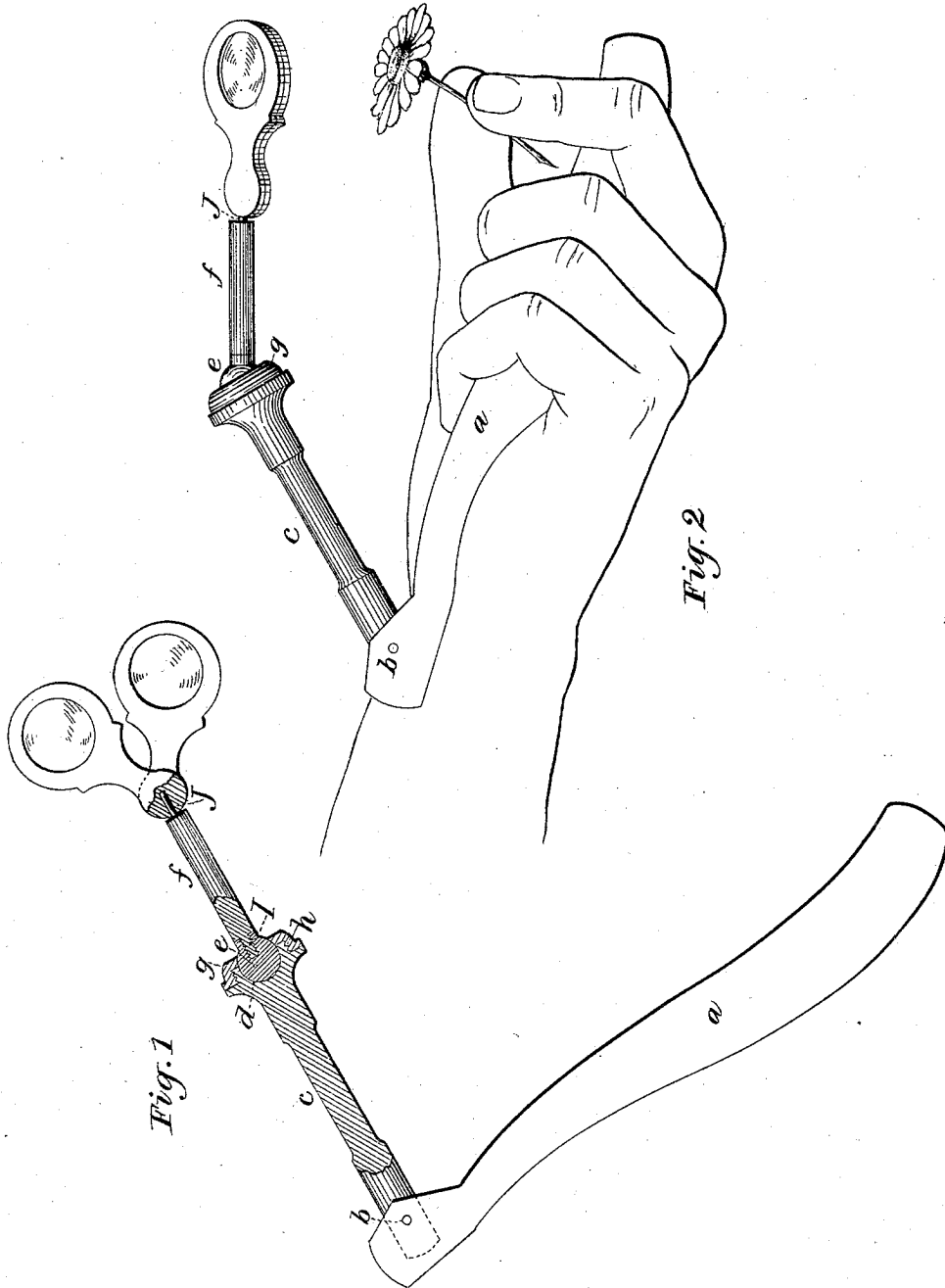


(No Model.)

L. E. SAYRE.
DISSECTING MICROSCOPE.

No. 463,168.

Patented Nov. 17, 1891.



Witnesses:
Arthur Waverly
Alexander Martin Wilson

Inventor,
Lucius Elmer Sayre

UNITED STATES PATENT OFFICE.

LUCIUS ELMER SAYRE, OF LAWRENCE, KANSAS.

DISSECTING-MICROSCOPE.

SPECIFICATION forming part of Letters Patent No. 463,168, dated November 17, 1891.

Application filed July 3, 1890. Serial No. 357,704. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS ELMER SAYRE, a citizen of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented certain new and useful Improvements in Simple Dissecting-Microscopes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the use of the ordinary simple dissecting-microscope difficulties are met with in the analysis of flowers and inspection of objects from the fact that both hands are necessarily employed in holding the instrument and object under examination. To overcome this difficulty and to give freedom in manipulation of objects and in the handling of lenses at the same time, I have invented a new and useful improvement in the combination, arrangement, and mode of operation of the parts of the microscope, so as to allow it and the object under examination both to be held in the same hand at one and the same time, while the other hand is free to dissect and turn in different positions the object under examination. This device, combination, and improvement consist of a suitable palm-piece or handle to be held in the hand and to extend down toward the wrist. At the wrist end of this hand-piece is attached and connected by a hinge-joint an arm, which is allowed to move freely in a vertical plane when the instrument is held in a position for use. The summit of this arm, or the end farthest from the hand-piece, is a socket which is threaded on the outside. Into this socket is inserted and fitted a ball, forming the ordinary ball-and-socket joint, and into a threaded hole properly made in this ball is screwed a small post, which terminates at its other end in a needle-point. A screw-cap is screwed on this socket, which forms the summit of the arm after the insertion of the ball into which the post is screwed, and by the adjustment of this screw-cap the ball and post are held either firmly or loosely. The needle-point at the termination of this post fits into a drilled hole in the handle of

the frame of the lens of the microscope. The hand-piece is from five to six inches long and about one inch wide and of such shape as to fit and be held firmly in the inclosed palm of the hand. The post is about one and a half inches in length from the circumference of the ball in the socket to the extremity of the needle-point, and the arm is of such a length as with the addition of the length of the post to allow the lens to be brought over the object under examination as it is held between the thumb and forefinger of the hand which holds the microscope. In the hand-piece is a groove of sufficient breadth and depth to receive and protect the arm-post and lens when closed.

The annexed drawings give an illustration of the instrument and the letters indicate its several parts.

Figure 1 is a representation of the instrument partly in section, and Fig. 2 showing it as held in the hand in use.

a is the hand-piece; *b*, the hinge-joint; *c*, the arm, which is connected by the hinge-joint to the hand-piece; *d*, the socket at the summit of arm *c*; *e*, the ball at the base of post *f*, which fits into socket *d*; *f*, the post, which is screwed into ball *e* and supports the lens; *g*, the screw-cap which covers socket *d*; *h*, a thread on outside of socket; *I*, a screw at base of post *f*; *J*, a needle-point at extremity of *f*.

The object and purpose of my improvement are to afford such movement of the instrument as will enable the lens to be brought over the object under examination when the instrument and the object are both held in the same hand.

I do not claim, broadly, the invention of a handle of a simple dissecting-microscope, nor any novelty in the hinges or joints used.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a simple dissecting-microscope, of a grooved hand-piece *a*, with an arm *c*, connected with said hand-piece by a hinge-joint *b* and having at its other extremity a socket *d* and capable of movement in the same plane with said hand-piece, and the further combination of both said hand-piece *a* and arm *c* with a post *f* by means of a ball-and-socket joint formed by inserting

the ball *e*, into which post *f* is screwed into the socket *d* and adjustable by screw-cap *g*, and the further combination of all these said three parts of the handle with the lens placed upon a needle-point *J*, the termination of a post *f*, all substantially as set forth.

5 2. An improved handle of a simple dissecting-microscope, consisting of three parts, to wit: a grooved hand-piece *a*, an arm *c*, and a

post *f*, terminating in a needle-point *J*, upon which the lens is placed, said parts being combined and united substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LUCIUS ELMER SAYRE.

Witnesses:

FRED. E. STIMPSON,
E. MABEL SAYRE.