A. PELLOW & L. G. SIMPSON.

WORK SUPPORT FOR LENS CUTTING MACHINES.

APPLICATION FILED APR. 10, 1911.

1,119,111.

Patented Dec. 1, 1914.

2 SHEETS—SHEET 1.

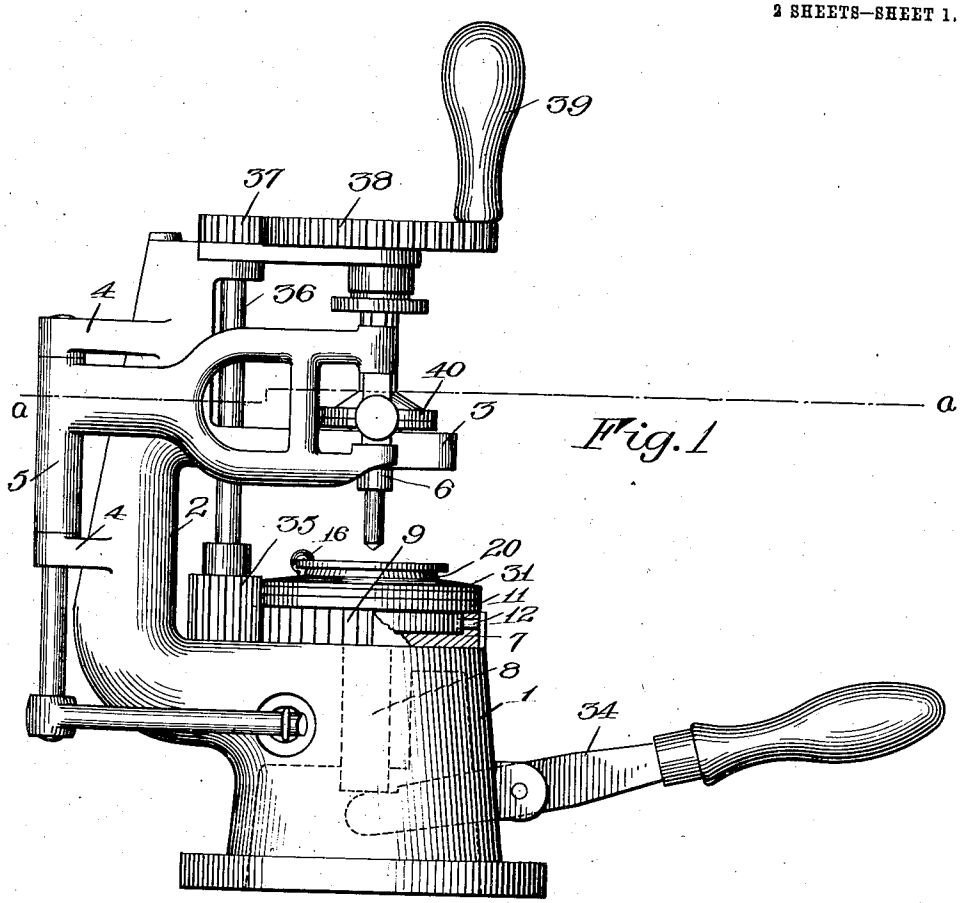


Fig. 1

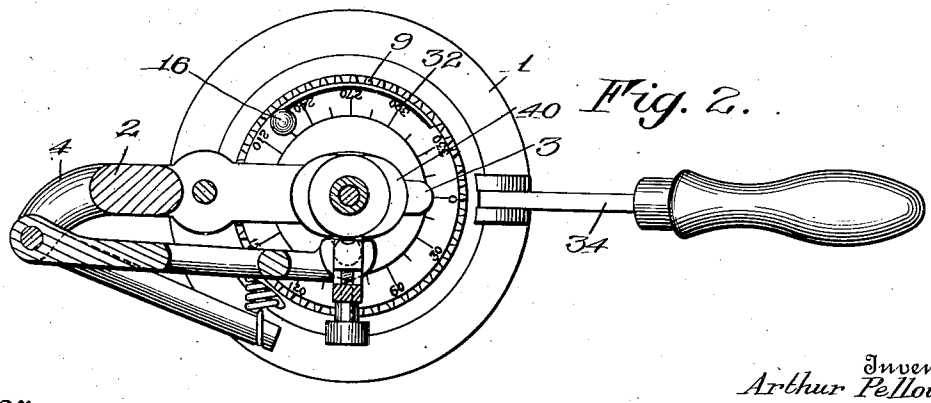


Fig. 2.

Witnesses
H. E. Stonebraker.
Nelson Lopp

Inventors
Arthur Pellow
Leon G. Simpson

By Church & Church

Their Attorneys

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2 SHEETS—SHEET 2.

Fig. 3.

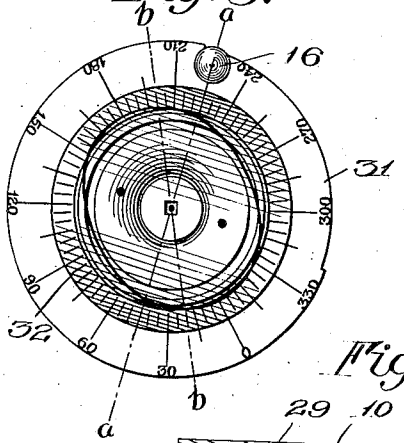


Fig. 4.

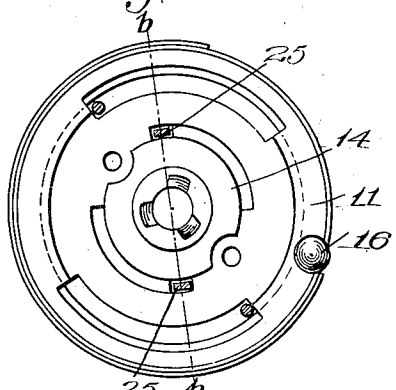


Fig. 5.

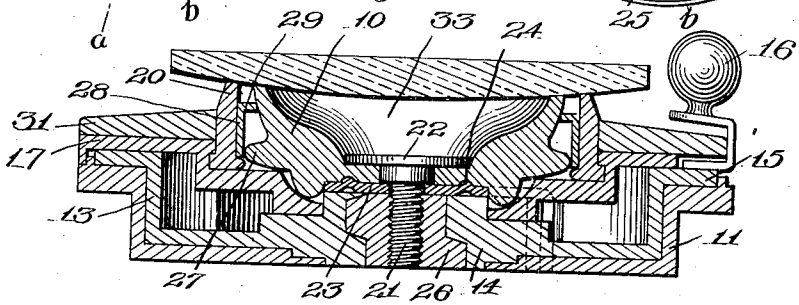
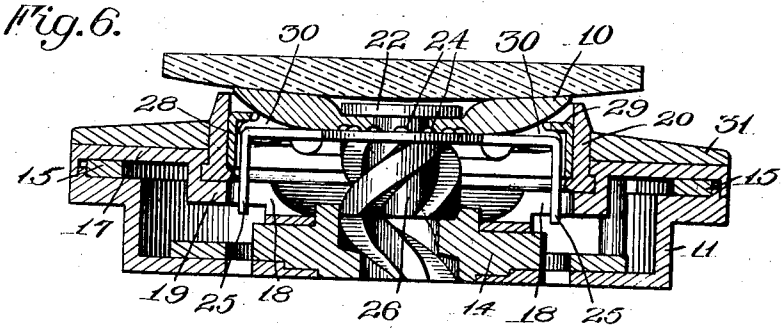


Fig. 6.



Witnesses

H. E. Stonebraker

Nelson Cipp

Inventors

Arthur Pellow

Leon G. Simpson

By Church & Rick

their Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR PELLOW AND LEON G. SIMPSON, OF ROCHESTER, NEW YORK, ASSIGNORS TO BAUSCH & LOMB OPTICAL COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

WORK-SUPPORT FOR LENS-CUTTING MACHINES.

1,119,111. Specification of Letters Patent. Patented Dec. 1, 1914.

Application filed April 10, 1911. Serial No. 619,942.

To all whom it may concern:

Be it known that we, ARTHUR PELLOW and LEON G. SIMPSON, both of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Work-Supports for Lens-Cutting Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of the specification, and to the reference-numerals marked thereon.

The present invention relates to a work support and has for its particular object to provide a novel means for retaining a lens in operative relation to a cutting tool, on a lens cutting machine, although the invention is not limited to this particular type of machine, but is capable of being used with any machine embodying a cutting, grinding or other operating tool, where it is necessary to hold a surface against movement in the direction of its supporting plane, and in engagement with the tool.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claim at the end of the specification.

In the drawings: Figure 1 is a view in side elevation illustrating the invention as embodied in a lens grinding machine. Fig. 2 is a sectional view on the line *a*—*a* of Fig. 1. Fig. 3 is a plan view of the work support, showing a lens in position thereon. Fig. 4 is a view, also in plan, with the upper portion of the work support removed and showing the arrangement of the operating nut for elevating and lowering the suction cup. Fig. 5 is a sectional view on the line *a*—*a* of Fig. 3, showing the suction cup in lowered position. Fig. 6 is a sectional view on the line *b*—*b* of Figs. 3 and 4, showing the suction cup in elevated position.

Similar reference numerals throughout the views indicate the same parts.

The invention is illustrated as applied to a lens cutting machine comprising a main frame 1 and standard 2, the latter having a forwardly extending arm 3, and rearwardly extending arms 4, the latter constituting bearings for a vertical arbor 5, carrying the oscillatory tool holder 6, which is held against the pattern 40 by means of a suitable spring, as will hereinafter be described.

Mounted upon the base 1 below the arm 3 is arranged a rotary work support 7, provided with a downwardly extending pintle 8, journaled in the base and capable of a vertical movement, the support 7 having gear teeth 9 at its periphery by which it may be rotated with the pintle 8 as a center.

In the operation of machines of this character, it has been found difficult to position the work properly on the work support, and it is the purpose of this invention to provide means for retaining a lens in firm engagement with the work support, in such a manner that it will be held in proper operative relation to the tool holder, and against movement laterally of the work support, while at the same time permitting a slight amount of resiliency in the support. To this end, there is provided a suction cup 10, formed preferably of rubber, and arranged to be moved vertically of the work support in the following manner: A recess is formed in the upper surface of the work support 7, and mounted in the recess is a casing 11 adapted to receive the suction cup and its coöperating parts and being keyed to the work support in any suitable manner as by means of a locking pin 12 in engagement with the respective parts. Mounted in the casing 11 is a rotary controller plate 13 provided at its central portion with a nut 14, and having at its outer edge a flange 15 to which is secured an operating thumb-piece 16. Fixedly mounted on the casing 11, and arranged above the controller plate 13 is a plate 17 provided with recesses 18 for a purpose which will presently be explained. A shoulder 19 is formed on the plate 17 and constitutes a support for the collar 20, which is preferably constructed of comparatively hard rubber or other slightly resilient substance, the upper edge of the ring constituting a rest for the lens, as shown in Fig. 5.

The suction cup 10 is secured to a stem 21, being held on the stem between the head 22 and the disk 23, the latter having struck-up portions 24 in engagement with the bottom of the cup so as to hold the cup more rigidly. The disk 23 is provided with out-

wardly and downwardly extending arms 25, which engage the recesses 18 aforementioned, and serve to guide the cup in its vertical movement. Mounted on the stem 21, below the disk 23, is a cam 26 adapted to engage the opening in the nut 14, so that as the latter is rotated, cam 26 is elevated or lowered, and with it the suction cup 10. An outwardly projecting flange 27 is formed on the suction cup, and secured to the inner face of collar 20 is a ring 28 having an inwardly projecting flange 29 arranged to engage the flange 27 on the suction cup and limit the upward movement of the latter. The flange 27 of the suction cup is provided with recesses 30 which receive the guiding arms 25, when the cup is raised, as shown in Fig. 6. Arranged above the plate 17, and attached thereto in any suitable manner, is the cover 31 which is provided with a scale 32, to enable positioning the lens, so that its axis is at the proper angle.

In the operation of the invention, the thumb-piece 16 is first moved to turn the controller plate and nut so as to elevate the cam and suction cup to the position shown in Fig. 6. The lens is then forced down on the suction cup so as to engage every portion of the outer edge of the latter, the angular position of the lens being determined by the stationary scale on the cover. The controller plate is then operated in the opposite direction, so as to lower the cam and suction cup to the position shown in Fig. 5, whereby the lens engages the upper edge of the collar 20, and is held with sufficient rigidity by the vacuum produced between the lens and the bottom of the suction cup, as indicated at 33. It will be apparent that other adaptations of the suction device might be employed, and other means for raising and lowering the suction cup might be used, without departing from the spirit of the invention as defined by the appended claim. The rotary work support is elevated into engagement with the tool holder by means of the pivoted lever 34, and is rotated by the elongated pinion 35 mounted on the shaft 36, which has at its upper end a pinion 37 meshing with a gear-wheel 38, the latter being mounted on the pattern-carrying sleeve and having an operating handle 39. The pattern sleeve is provided with a suitable pattern 40, which engages the tool holder, the latter being held in yieldable engagement with the pattern and operating upon the work to mark or cut thereon the shape of the pattern, this and the remaining parts last described being old and constituting no part of the present invention.

We claim as our invention:

The combination with a casing, of a rotary plate mounted on the base of the casing, a nut provided at the center of said plate and movable therewith, a work supporting collar mounted on the casing, a suction cup movable within said collar, a stem carrying the suction cup, a cam mounted on said stem and having engagement with the aforesaid nut, a flange on the suction cup, and means extending inwardly from said collar and projecting in the path of the flange.

ARTHUR PELLOW.
LEON G. SIMPSON.

Witnesses:
DANIEL M. SMITH,
WILLIAM G. WOODWORTH.