L. G. SIMPSON.

LENS GRINDING MACHINE.

APPLICATION FILED NOV. 30, 1918.

1,381,245.

Patented June 14, 1921.

Fig. 1

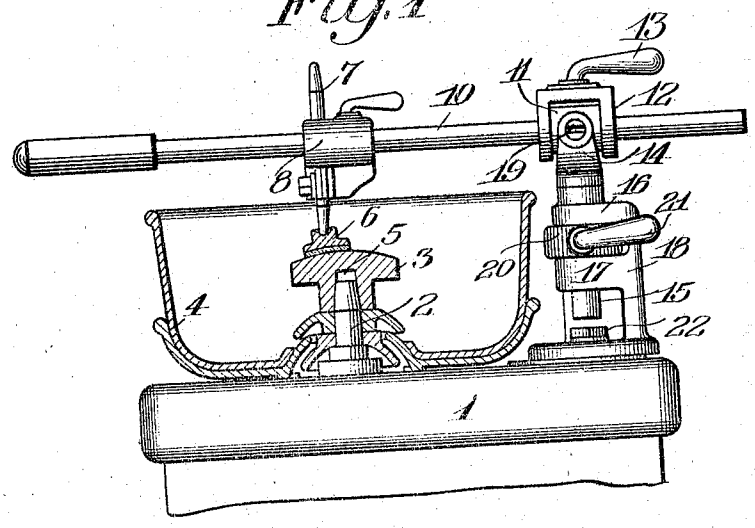
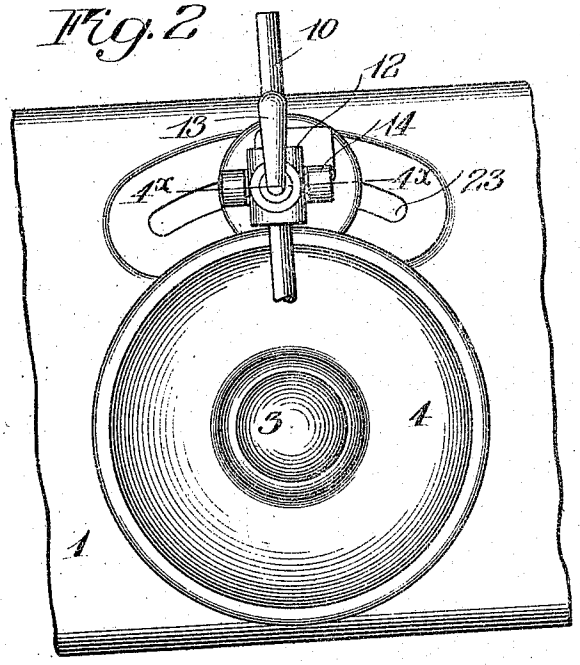


Fig. 2



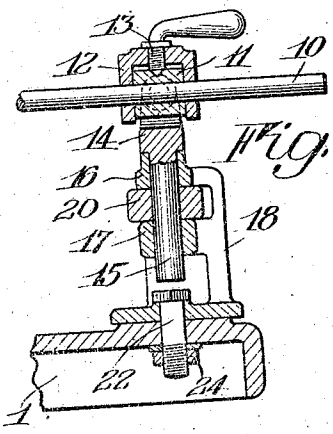
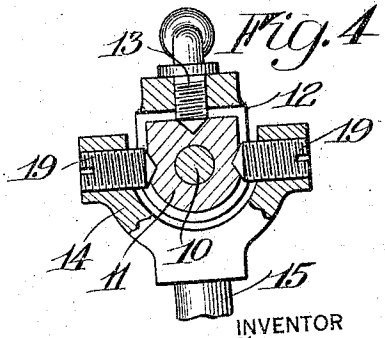


Fig. 3

Fig. 4



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LENS-GRINDING MACHINE.

1,381,245. Specification of Letters Patent. **Patented June 14, 1921.**

Application filed November 30, 1918. Serial No. 264,848.

To all whom it may concern:

Be it known that I, LEON G. SIMPSON, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lens-Grinding Machines; and I 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 this specification, and to the reference-numerals marked thereon.

My invention relates to lens grinding and polishing machines and more particularly to machines of the type known as prescription grinding machines. The object of my invention is to provide an improved overhanging arm for the work carrier of such machines which is rotatably and longitudinally adjustable in its support for the purpose of bringing the lens being ground into cooperation with any desired part of the grinding shell or lap. Another object of the invention is to provide an overhanging arm for lens grinding machines which is adjustable to vary the leverage thereof. More specifically, the object of my invention is to mount the work carrier spindle on the overhanging arm to be adjustable longitudinally thereof, the overhanging arm itself being mounted for universal adjustment in a support which itself is adjustable concentrically with the axis of the grinding lap for right or left hand operators.

In the drawings:

Figure 1 is a side elevation of a lens grinding machine illustrating one embodiment of my invention, the base of the machine and one side of the splash basin being sectioned away,

Fig. 2 is a plan view of the same, one end of the overhanging arm and part of the table being sectioned away,

Fig. 3 is a detail sectional view of the supporting bracket for the overhanging arm, and

Fig. 4 is a section on line 4^x—4^x of Fig. 2.

Similar reference numerals in the several figures indicate the same parts.

My invention relates to lens grinding machines, the principal features of which are disclosed but not claimed in my application for patent Ser. No. 119,157, filed Sept. 9, 1916, for lens grinding and polishing machines.

In said machine, a table or bench 1 is supported on a frame or by other preferred means not shown. A shaft or spindle 2 has a bearing in the table and at its lower end is connected with driving means not illustrated herein. At its upper end the shaft 2 receives a grinding or abrading lap or shell 3 which is surrounded by a splash pan or basin 4. It is often desirable to substitute a polishing shell or a grinding shell of different curvature for the one in use and for this purpose the upper end of the shaft 2 is tapered, and to coöperate therewith the abrading implements are provided with tapered sockets as shown at 5. A work carrier 6 cooperates with the grinding shell and is held in proper working position thereon by means of a carrier spindle 7, which is adjustably secured in a bracket 8 mounted on the overhanging arm 10. The bracket is clamped to the arm to be adjustable longtudinally thereof. The overhanging arm 10 is in the form of a rod or bar preferably cylindrical in form and extends through an opening in the head 11. A clamping yoke 12 has an opening through each of its legs through which the arm 10 extends, and the part of the yoke connecting the legs lies adjacent the top of the head and has a screw threaded opening which receives a set screw 13. The construction is such that when the set screw is loosened, the arm is rotatably adjustable to incline or tilt the spindle, and also longitudinally adjustable to lengthen or shorten the arm. When the arm is properly adjusted, the set screw 13 is again manipulated to clamp the arm between the head and the clamping yoke to secure it in adjusted position. The head 11 is trunnioned in a yoke 14 which forms the head of a shaft or post 15 journaled in bearing bosses 16 and 17 provided therefor on a bracket 18. The arms of the yoke 14 are provided with screw threaded openings, which receive the set screws 19, in which the head 11 is pivotally supported. It will be noted that by this arrangement, the arm 10 may be swung in a vertical plane about the axis of the trunnions 19 in the yoke 14, and also laterally about the axis of the post 15. The shaft or post 15 may be adjusted vertically, and for this purpose, a collar 20 is secured thereto behind the bosses 16 and 17 by means of a set screw 21. The collar 20 fits snugly between the bosses 16 and 17 and serves as a

thrust bearing for the post 15, preventing axial movement of the post which would cause chattering and imperfect grinding.

The bracket 18 is secured to the table or bench by means of a bolt 22 which passes through an arcuate groove or slot 23 in the table, and at its lower end receives a nut 24. The slot 23 is concentric with the axis of the abrading shell 3 and provides a means for adjusting the overhanging arm to a position most convenient for the operator of the machine. In Fig. 2 the bracket is shown in a neutral position. For a right hand operator, it would be adjusted to the left hand end of the slot in said figure, and for a right hand operator to the opposite end of the slot.

While the invention has been disclosed embodied in a machine in which the overhanging arm supports the lens carrier, it may quite obviously be adapted to those machines, in which there is a reversal of parts, and in which the grinding shell is carried instead by the overhanging arm, as is old and well known in the art.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a lens grinding machine, the combination of a grinding shell, a lens carrier cooperating therewith, a bracket adjustable concentrically with the axis of the grinding shell, and an overhanging arm adapted to carry the lens carrier and supported by said bracket.

2. In a lens grinding machine, the combination of a grinding shell, a lens carrier cooperating therewith, a bracket, a post rotatable in and adjustable relative to said bracket, a collar adjustably secured to said post and engaging said bracket to prevent axial thrust of the post in any adjusted position, and an overhanging arm adapted to carry said lens carrier pivoted to said post.

3. In a lens grinding machine, the combination with a lens carrier and grinding shell of an overhanging arm pivotally and adjustably mounted to carry one of them, a table top on which is rotarily positioned the other, a bracket supporting the overhanging arm, said bracket being adjustable to be fixed in different locations on the table top, and means for securing the bracket in adjusted position on the table top.

4. In a lens grinding machine the combination with a grinding shell, of a lens carrier for coöperation therewith, a bracket, a rotatable post carried by the bracket and adjustable for height relative thereto, a thrust collar on said post, means on the bracket adapted to coöperate with either side of the thrust collar to restrict axial thrust of the post in either direction, and a manually guided arm pivotally supported by the post and adapted to support the lens carrier.

5. In a lens grinding machine, the combination with a grinding lap, of a lens carrier for coöperation therewith, an arm adapted to support one of them, a post to which the arm is adjustably pivoted, a thrust collar adjustable on the post, a supporting bracket for the post, bearing bosses on the bracket perforated for the reception of the post and in coöperation with each face of the thrust collar, and means on the thrust collar for adjustably clamping the same to the post.

6. In a grinding machine the combination with a lens carrier, of a grinding lap for cooperation therewith, a pivotal arm adapted to carry one of them, a table top on which the other is rotarily mounted, a post for supporting the arm from the table, said table top having an arcuate groove therein substantially concentric with the center line of the member rotarily mounted thereon and clamping means in coöperation with the groove and post to hold the post in any adjusted position along the groove.

7. The combination with a work holder, of a cutter for coöperation therewith, a table top on which one of them is supported, an overhanging pivoted arm by which the other of them is carried and a post for supporting the arm above the table top, said post being adjustable over the table top substantially concentric with the center of that member which is supported on the table top.

LEON G. SIMPSON.