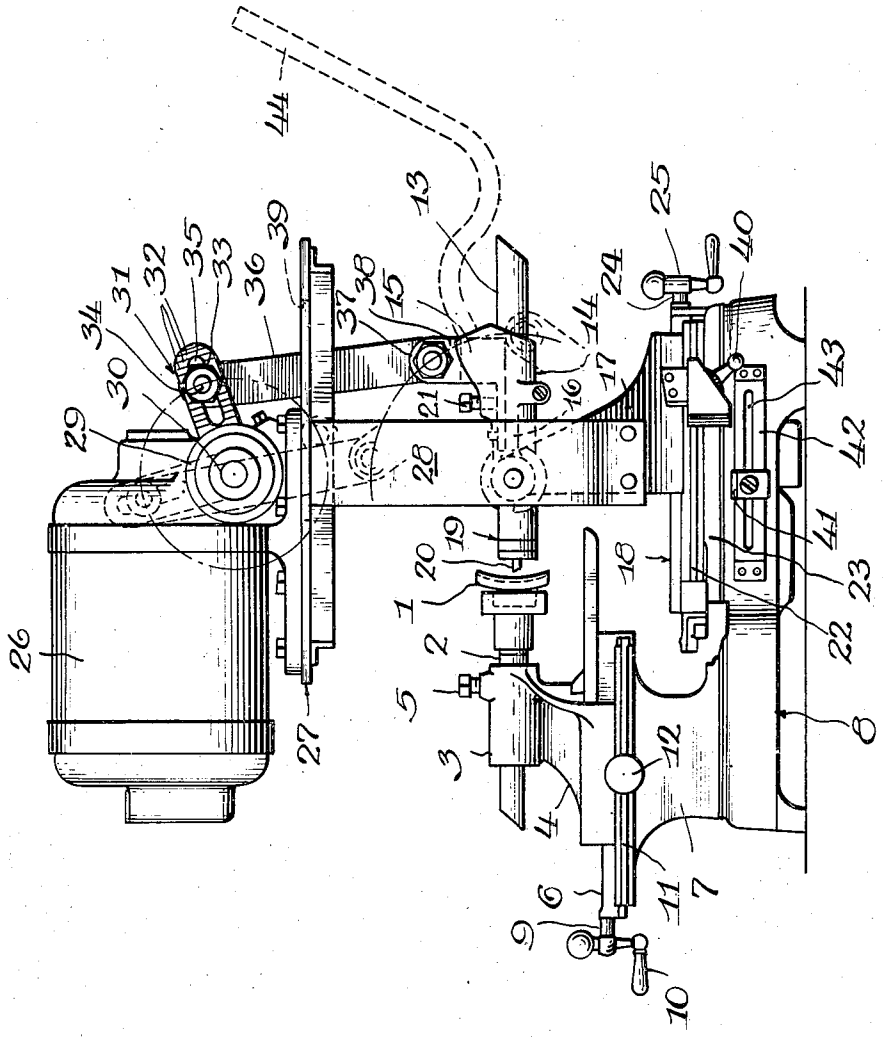
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ATTACHMENT FOR LAPTRUERS

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Fig. 1



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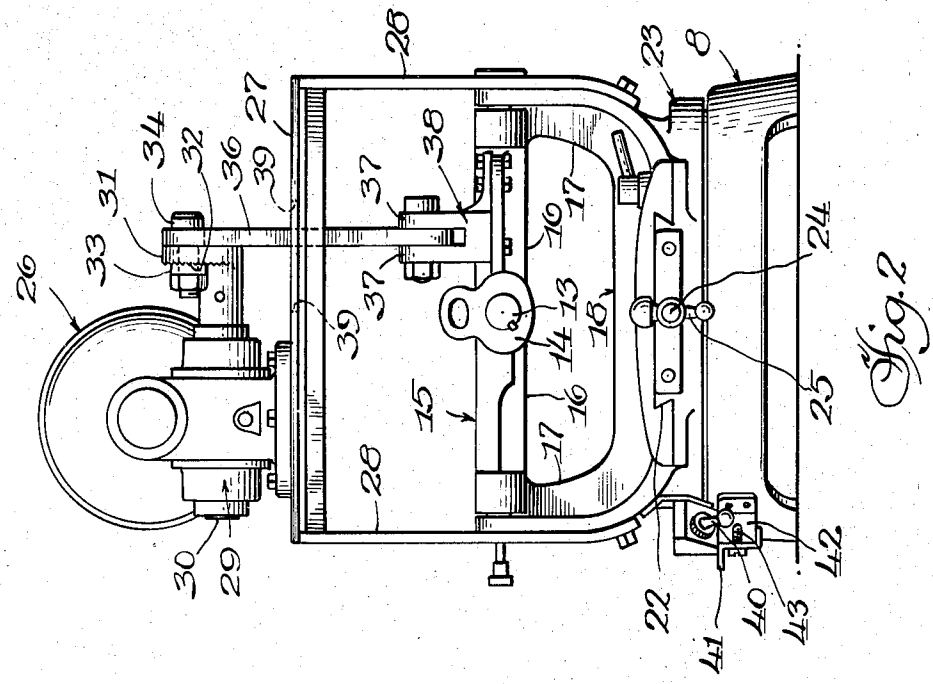


Fig. 2

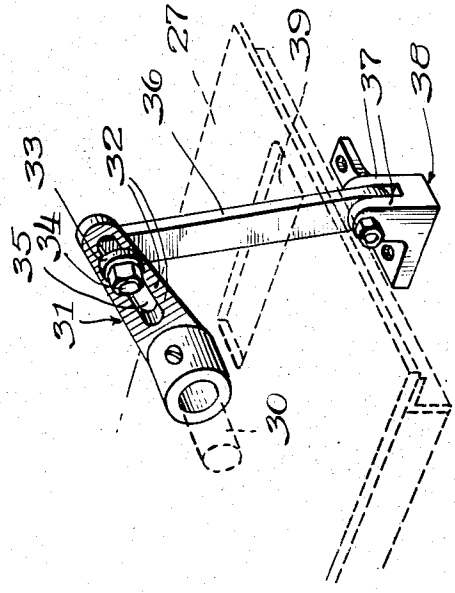


Fig. 3

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ATTACHMENT FOR LAPTRUERS

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2 Claims. (Cl. 90—24)

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The present invention relates to laptruers and especially to an attachment or adaptor for a manually operable laptruer or apparatus for truing up tools in the process of grinding optical lenses whereby to insure a definite and proper base curve which gives it proper foci whatever the correction may be. Each lap must be absolutely true and is tested by a master gage before being used. If the lap is not true, the lens produced thereby will come out of foci and have waves or prisms. It is therefore essential that each optical manufacturer employ a laptruer, otherwise it has no way or means of keeping its tools in shape to turn out the lenses properly as prescribed.

Among the objects of the present invention is to provide a novel means and mechanism adapted to be readily and easily attached to a manually operated or hand propelled laptruer for converting it into an entirely automatic, power-driven apparatus.

A further object of the present novel invention is to provide an automatic switch mounted on the movable or rotatable part of the base and adapted to be moved into contact with an actuating or tripping member disposed on a stationary part of the base in a position for automatically tripping a switch secured upon a rotatable carriage at the end of the desired stroke. The actuating or tripping member is readily adjustable in accordance with the desired width of the laps so that the apparatus can be automatically shut off or stopped at any desired point by the switch coming in contact with the actuating member.

The invention further comprehends a novel power operated adaptor for a laptruer so constructed and arranged that the stroke of the apparatus may be adjusted through wide limits to take care of any given lap.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

The invention further resides in the construction, combination and arrangement of parts illustrated in the accompanying drawings, and while there is shown therein a preferred embodiment, it is to be understood that the same is susceptible of modification and change, and comprehends other details, arrangements of parts, features and constructions without departing from the spirit of the invention.

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In the drawings:

Figure 1 is a view of a side elevation of our novel attachment or adaptor mounted upon a conventional form of laptruer.

Figure 2 is a view in end elevation of the disclosure in Figure 1.

Figure 3 is a perspective view of the crank connection between the motor drive and yoke.

Referring more particularly to the drawings and to the embodiment therein selected to illustrate the invention, the novel adaptor is shown as mounted upon and forming an attachment for a conventional, manually operated laptruer of the type disclosed in the Bausch Patent No. 1,537,059, granted May 12, 1925, although it is to be understood that the invention is not limited thereto but is adapted to other forms of manually operated types of laptruers.

In laptruers of the type disclosed, the work or lens grind-tool 1 is mounted and carried upon an arbor 2 slidably and adjustably mounted in a bearing 3 disposed adjacent the upper end of a slide 4. A set screw 5 is provided for clamping and locking the arbor in its adjusted position. The slide 4 is slidably carried on guideways 6 supported on a table or other support 7 upon a main frame 8. In order to adjust the slide 4 upon the guideways 6, there is provided a rotatable spindle 9 having a handle 10 adapted to be manually rotated. Thus the slide 4 may be readily moved to adjust the arbor 2 toward or from the center of the machine, and the arbor may also be adjusted in a similar manner in its bearing 3. A slot 11 in the table or support 7 is provided with a stop 12 whereby the slide may be retained in its set position.

A second arbor 13 is carried within a bearing 14 formed in the yoke 15. This yoke is provided with spaced arms 16 formed at their outer ends with suitable bearings for receiving trunnions journalled in the upper ends of spaced standards 17 provided in a slide 18. The inner end of the arbor 13 is provided with a tool holder 19 carrying a suitable cutting tool 20 for producing the desired cuts on the curved surface shown in dotted outline on the work 1 carried by the arbor 2. This arbor 13 is longitudinally slidable in its bearing 14 and may be clamped in adjusted position in the yoke 15 by means of a set screw 21.

The slide 18 is longitudinally movable upon guideways 22 provided on the upper end of a carriage or turret 23 rotatably mounted upon the frame 8. The slide is adjustable toward and from the center of the machine by any suitable means such as a threaded spindle 24 rotatable and ad-

justable through a handle 25 and is adapted to be clamped in its adjusted position by any suitable mechanism.

The arbor 13 may be oscillated about the horizontal axis of the trunnions journalled in the upper ends of the spaced standards 17, and may also be swung in a horizontal plane by swinging or rotating the carriage or turret 23 about its vertical axis. This arbor may also be adjusted longitudinally by the adjustment in the yoke 15 and by the adjustment of the slide 18 on the carriage or turret. In the disclosed embodiment, the arbor 13 is oscillated in a vertical plane by the novel attachment or adaptor of the present invention to produce a cutting action and generate one curvature. The arbor is also given a step-by-step or intermittent swinging movement in a horizontal plane to produce the other curvature and also a relative feeding movement of the tool and work. Mechanism for producing the last mentioned movements may be of the type shown and described in the Bausch patent referred to above.

In the aforementioned patent, the manner of oscillating the arbor carrying the working tool in a vertical plane is by means of a manually operable handle. In the present device, this operation is carried out automatically and the mechanism therefor includes a motor 26 mounted upon a platform 27 supported upon the upper ends of brackets 28 bolted or otherwise rigidly connected to the opposite standards 17. The motor is provided with a speed reduced suitably geared to the motor drive shaft and enclosed within the housing 29 with the end of the shaft 30 carrying a crank arm 21. One face of this crank arm is serrated at 32 for adjustable, locking engagement with the serrated face of a nut and lock washer 33 upon a bolt or the like 34 adapted to be received in the elongated slot 35 in the crank arm. A link 36 having its one end carried by the bolt 34 and its other end connected to the bifurcations 37 of a bracket 38 suitably connected to the yoke 15, is adapted to oscillate the yoke and its cutting tool in a vertical plane, with the stroke thereof adjusted between predetermined maximum and minimum limits. Good results have been secured by varying the stroke to the maximum limit of the machine, which is sufficient to take care of any given lap. In order that the crank arm 31 may be rotated and the link 36 reciprocated without interference, the platform 27 is provided with an elongated slot or opening 39 of such length and width as to accommodate the movement of the crank arm 31 and link 36.

Means are provided for automatically disconnecting power to the motor and its operating mechanism when the carriage or turret has been rotated through a predetermined arc. This is accomplished by providing the carriage or turret

with a switch 40 which may be of the toggle type and which is tripped by an adjustably mounted setting gage or stop 41 slidably mounted upon a bracket 42 secured to the main frame 8. Adjustment of the setting gage or stop 41 may be accomplished by means of a bolt or other securing means slidable in an elongated slot 43 and when adjusted to the predetermined position, is secured in place. Thus as the carriage or turret 23 with its attached toggle switch is moved into engagement with the stop, it is automatically tripped to break the circuit and stop operation of the motor 26.

The handle 44 is shown in dotted outline permitting manual operation of the apparatus should there be any failure in power.

Having thus disclosed our invention, we claim:

1. A power attachment for a manually operable laptruer of the type including an arbor carrying the work, an arbor carrying a cutting tool and means for moving the last mentioned arbor and cutting tool in both an oscillatory and arcuate path for producing the desired cuts in the work, comprising a power unit including a continuously rotating member, means connecting said continuously rotating member to the cutting tool in such manner as to oscillate the tool through the desired vertical stroke, and means for automatically stopping the cutting action when the tool reaches the end of a predetermined, arcuate path.

2. A power attachment for ready mounting and operative connection with a manually operable laptruer of the type provided with a stationary base and a member carrying a cutting tool adapted to rotate relative to the base, a power unit for automatically operating the laptruer, a switch mounted on the rotatable member and a stop mounted upon the base for tripping the switch and automatically stopping the operation of the power drive when the tool reaches the end of a predetermined cut.

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JAMES R. MORLOCK.

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