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SURFACING MACHINE SPINDLE ATTACHMENT

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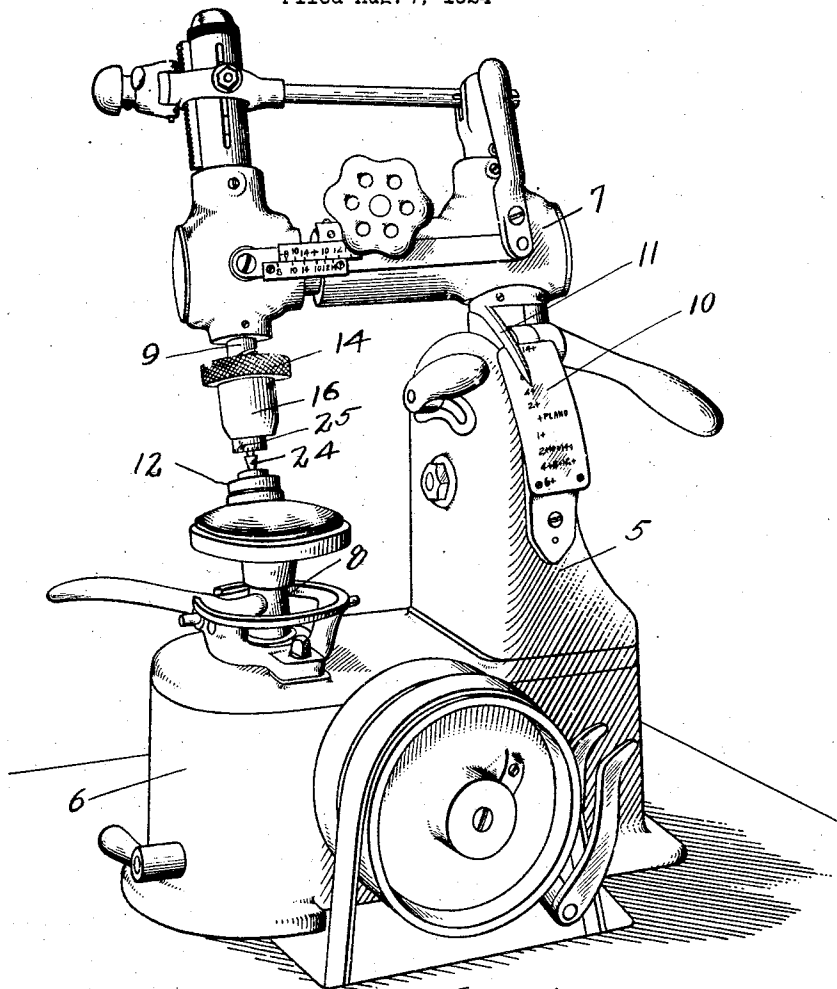


Fig. 1.

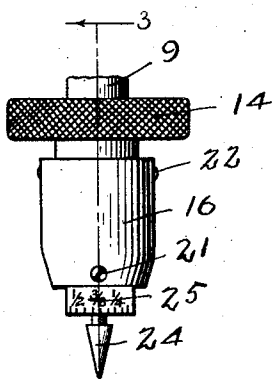


Fig. 2.

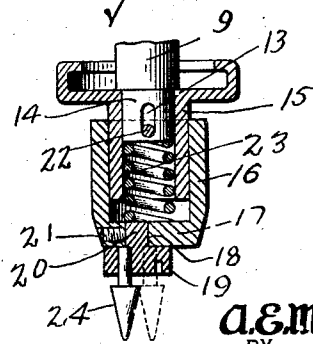


Fig. 3.

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SURFACING-MACHINE SPINDLE ATTACHMENT.

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The present invention relates to an improved lens surfacing machine and has particular reference to an attachment therefor which is adapted to prevent chattering of the machine when in use.

An important object of the invention is to provide an attachment for a lens surfacing machine which is adapted to control the eccentricity of the lens holding block with respect to the drive spindle therefor.

Another very important object of the invention is to provide a lens surfacing machine attachment of the class described that is capable of changing the eccentricity of the lens holding block with respect to the drive spindle and to be locked into adjusted position while at the same time the attachment is so arranged that it will prevent chattering of the machine during the surfacing operations thus overcoming the objectionable feature of the prior art structures.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings, wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view showing a lens surfacing machine embodying my invention.

Figure 2 is an enlarged elevation of the attachment.

Figure 3 is a section taken on line 3—3 in Figure 2.

In the drawings, wherein for the purposes of illustration is shown a preferred embodiment of the invention, the numeral 5 designates a lens surfacing machine having a base 6 and the adjustable head 7. Journaled through the base 6 is a lens surfacing tool supporting shaft 8 and adapted to move into and out of alinement therewith and journaled through the adjustable head 7 is a spindle 9. The various means for regulating the position of the upper spindle 9 with respect to the surfacing tool supported on the shaft 8 are well known in the art. In the present instance the exact adjustment is measured by means of the curved scale plate 10 and indicator 11.

Heretofore, a crank arm member was associated with the lower end of the spindle 9 to rotate the lens block and lens 12 in a cir-

cular path. These old forms of crank arms have introduced what is known as vibration or chattering, resulting in an uneven and undesirable lens, and often breakage to the lens.

In the present instance, I provide the lower end of the spindle 9 with the elongated slot 13. Furthermore, the end of the spindle 9 is reduced, as at 14. My attachment comprises the body portion 15 which is adapted to be slipped on to the reduced end 14 of the spindle as is clearly shown in Figure 3 of the drawings. The sleeve 16 is adapted to be slidably mounted on end of the body portion 15, the said sleeve having a substantially closed end 17 having an eccentrically arranged aperture formed therein as at 18, a rotatable plate 19 having a finger 20 is adapted to be associated with the closed end 17 of the sleeve in such a manner that the finger 20 will be received in the aperture 18 and to prevent accidental displacement thereof the said screw or the like 21 is adapted to bear thereagainst. The pin 22 is passed through the sleeve 16, body portion 15, and elongated slot 13 to restrict the relative movement between the parts. The coiled spring 23 is disposed between the lower end of the spindle 9 and the end 17 of the sleeve 16 so as to normally urge the said parts in opposite direction, being restricted in this movement by the pin 22.

A rotatable plate 19 is provided with an aperture adapted to receive a portion of the lens block engaging pin 24 as is clearly shown. As is shown in Figure 2, the rotatable plate 19 is provided with the graduations 25 so that the plate can be rotated in the aperture 18 with knowledge of the exact position of the pin 24. As is shown in full lines in Figure 3 the lens block engaging pin 24 is mounted off center from the axis of the spindle 9 and by means of the rotation of the plate 19 the member 24 can be moved into exact alinement therewith, and, obviously, any intermediate position desired. In this way any desired amount of eccentricity can be had with the small adjustment of the plate 19 and at the same time, due to the graduations 25 an accurate setting can be made. Furthermore, due to the short spring 23 and its location

at the bottom of the spindle 9, no chattering takes place and thus accurate and smooth lenses can be surfaced.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same and that various changes in the shape, size, and arrangement of the parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In combination with a lens surfacing machine spindle and a lens block, an attachment to regulate the movement of the block comprising a body portion mounted on the spindle, a slidable sleeve on the body portion, a lens block engaging pin carried by the said sleeve, and means to move the said pin into and out of alinement with the axis of the said spindle.

2. In combination with a lens surfacing machine spindle and a lens block, an attachment for determining the movement of the lens block comprising a body portion carried by the spindle, a sleeve having a closed end mounted on the body portion and slidable thereon, means to normally urge the

parts in opposite directions, means to restrict the movement thereof, a lens block engaging pin associated with the sleeve and adjustable with respect to the axis of the said spindle.

3. In combination with a lens surfacing machine spindle and a lens block, an attachment for determining the relative movement of the lens block with respect to the spindle comprising means carried on the end of the spindle, a rotatable plate eccentrically carried by said means with respect to the spindle and a lens block engaging pin carried by the said rotatable plate and movable therewith.

4. In a device of the character described a spindle having an elongated slot near its end, a tubular slide on the end of the spindle, a second tubular slide on the first, a pin extending thru the two slides into the elongated slot, a spring between the end of the spindle and the end of the second slide adapted to press the parts away from each other, a rotatable plate in the end of the second slide eccentrically pivoted with respect to the axis of the spindle and a bearing pin on the plate intermediate its center and edge.

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