[0046] To shift carriage **100** into the blocking position of **FIGS. 3 and 16**, motor **26** is actuated, under the control of processor **82**, to turn crank arm **156** clockwise as viewed in **FIGS. 13 and 15** and move crank pin **158** toward base **18** and through gap **140** between sidewall **116** and second portion **136** of torsion spring **132**. As crank arm **156** rotates, crank pin **158** moves in the direction of eccentric stop **160**, and thus allows spring **164** to contract and pull carriage **100** along linear slide **106** toward eccentric stop **160**. Crank arm **156** continues to rotate until carriage **100** contacts eccentric stop **160**. At this point, crank pin **158** is still in contact with sidewall **116**, as shown in **FIG. 15**, and block **148** is positioned beneath central opening **38** of stage **36** beneath a lens blank **42**. As the crank arm **156** continues to rotate in a clockwise direction, it moves away from sidewall **116** and engages third portion **138** of torsion spring **132**. Continued rotation of the crank arm **156** exerts upward pressure on third portion **136** of torsion spring **132** and moves L-shaped platform **124** upwardly, as shown in **FIG. 16**, so that block **148** passes through central opening **38** in the stage **36** and against lens blank **42**. Lens blank **42** is thus secured by adhesive pad **150** to block **148**, and thus may be placed onto a suitable edger. These steps are reversed to lower chuck **144** and move the carriage **100** back to the alignment position.

[0047] Referring now to **FIGS. 7 and 8**, the steps required for replacing lamp **44** with a secondary lamp **166** will be described. As noted above, persons operating lens blocking devices may not be trained to service the blocking devices, and replacing a burned out lamp may require that the lens blocking device be opened and/or partially disassembled. Thus, if a technician is not available when a lens needs to be replaced, the machine may experience significant out-of-service time. The lens alignment and blocking device **10** allows an unskilled operator to quickly switch a burned out lamp **44** with a secondary lamp **166**, so that the use of the lens alignment and blocking device **10** can continue substantially uninterrupted. A technician can then replace the burned out bulb when convenient.

[0048] As best shown in **FIGS. 7 and 8**, door **34** is opened to reveal lamp housing **168** and the inner side **170** of door **34**. When door **34** is closed, lamp **44** is directed toward first mirror **46** as shown schematically in **FIG. 4**. Door **34** includes an opening **172** through which a shaft **174** extends, shaft **174** being connected to a support frame **176**. Shaft **174** is rotatably mounted in opening **172** so that support frame **176** can be rotated by turning shaft **174** when door **34** is closed. Shaft **174** also includes a socket **178** for receiving a screwdriver or hexagonal wrench (not shown) with which shaft **174** can be more easily rotated. Lamp **44** and secondary lamp **166** are mounted on support frame **176** for rotation therewith. Inner side **170** of door **34** includes an electrical contact plate **180**, as best shown in **FIG. 8**, connected to a power source. Lamps **44** and **160** also include electrical contact plates **182** and **184**, respectively. By rotating shaft **174**, one or the other of lamp electrical contact plates **182**, **184** can be brought into electrical contact with inner door contact plate **180** to provide power to one of the lamps. All this can be done from the outside of lens alignment and blocking device **10** without opening door **34**. In this manner, a new lamp **166** can be substituted for a burned out lamp **44** in a matter of minutes without the aid of a skilled technician.

[0049] The use of lens alignment and blocking device **10** will now be described with reference to the flow chart of **FIGS. 17*a*** and **17*b***. When lens alignment and blocking device **10** is turned on, a self-test is conducted at step **200** to determine whether firmware in the device is valid. If the firmware is valid, the operator may optionally change configuration parameters at step **202**, perform calibrations or diagnostics at step **204**, or view or manage blocking jobs in local storage at step **206**. Each of the stored jobs includes numerical data concerning a lens to be blocked and data for generating alignment images **86** for the particular lens, as best shown in **FIG. 10**. At step **208**, the carriage **100** is shifted into blocking position **154**, shown in **FIG. 3**, with the upper end **146** of chuck **144** extending though central opening **38** in stage **36** so that a block **148** can be attached to the chuck **144** on L-shaped platform **124**. Next, at step **210**, a job number is entered, either using keyboard **83** or a barcode reader (not shown), and at step **212**, memory **85** is queried to determine whether a job associated with that job number is stored in memory. If the job is in local storage, processor **82** causes relevant data **84** for that job to be displayed on screen **32** in position **72** in step **214** in appropriately designated fields. If the job is not in local storage, it is determined at step **216** whether a host device (not shown) is connected to lens alignment and blocking device **10**. If a host device is connected, a download of information is requested from the host at step **218**. If the download is successful, data are displayed on screen **32**. If the download is unsuccessful, or if there is no host device connected to the lens alignment and blocking device, then a job screen is displayed for data entry at step **220** and relevant data is manually entered via keyboard **83**.

[0050] The job data will often include data relating to the prescription of a patient's left eye and a patient's right eye, and at step **222**, a selection of either right eye or left eye is made (since only one lens blank can be blocked at a time), and at step **224** the job data is either entered or, optionally, edited. At step **226**, block **148** is attached to chuck **146**, and motor **26**, which is operably connected to processor **82**, is actuated via a key switch, preferably a foot-operated switch (not shown), to shift carriage **100** from the blocking position **154** to the viewing position **152** shown in **FIG. 2**. A lens blank **42** is then manually placed on pegs **40** at step **228**. An image **42'** of lens blank **42** will be visible on screen **32** in position **72** as the image is reflected off second mirror **52**, passed through the lens of C-shaped optics housing **30**, reflected off third mirror **54** and onto the rear surface of second region **74** of screen **32**. **FIG. 10** shows the projected image **42'** of lens blank **42** on screen **32**. Images **40'** of pegs **40** are also visible, as are images **43'** of reference markings **43** on the lens blank. Alignment images **86** generated by screen **32** can be seen combined with the projected image of reference markings **43'**. At step **230**, the operator moves the lens blank **42** until the images **43'** of the reference markings **43** are aligned with the alignment images **86** on the screen **32**. As noted above, because the image **42'** of the lens blank is projected on a plane (the translucent film **87** on the rear surface **79** of screen **32**) that is preferably less than about 0.5 millimeters from the alignment markings, which exist in the plane of liquid crystal layer **78** in screen **32**, parallax is substantially eliminated. The alignment of alignment images **86** with the images **43'** of reference markings **43** will be accurate even if screen **32** is viewed from an angle. Once the images **43'** of the reference markings **43** are aligned with the alignment images **86** on screen **32**, the operator, at step **232** engages motor **26**, again using a key switch or foot operated