displays alphanumeric data and graphics **84** within defined fields, while the second region **74** displays fiducial marks, such as crosshairs or other alignment images **86** as best shown in **FIG. 10**. The image **42'** of the lens blank **42** is projected against the rear surface **79** of rear planar support **81**, and, because the second region **74** of the LCD is translucent or at least partially translucent, the image **42'** projected onto the translucent film **87** on rear surface **79** of the rear planar support **81** is visible from the front or frame side of the LCD **66**. Images **40'** of the pegs **40** are also visible. The projection system **34** enlarges the image **42'** making it easier to accurately align image **42'** with the alignment images **86**. The alignment images **86** are seen combined with the projected image **42'** on the screen **32**. The lens blank **42** on pegs **40** can be moved as necessary to align projected images **43'** of alignment markings **43** on lens **42** with alignment images **86** on the screen. Because the image conditioning assembly **58** inverts image **42'**, the image **42'** that is projected against rear surface **79** of screen **32** moves in the same direction as the lens **42**, i.e., when lens **42** is moved to the left, the image **42'** also moves to the left, as viewed in **FIG. 10**, and when lens **42** is moved away from a user (toward the rear **16** of the lens alignment and blocking device **10**), the image **42'** on screen **32** will move upwardly, in a direction away from backlit first region **72** of LCD **66**. This makes the lens alignment and blocking device **10** easier to use than prior art devices in which images of lens blanks often appeared to move in the opposite direction from the direction in which the lens blank was moved. Moreover, rear planar support **81** is only about one half of one millimeter thick. Thus, image **42'** exists in the plane of the rear surface **79** of planar support **81** which is less than about 1 mm and preferably about 0.5 millimeters from the plane of the image generated by the liquid crystal material in liquid crystal layer **78**. This close alignment of the planes of the alignment images **86** and the projected image **42'** substantially eliminates the problem of parallax for a person viewing screen **32** from an angle. This, in turn, allows for more accurate alignment of a lens blank **42** with a lens block **148** and the production of higher quality lenses.

[**0039**] FIGS. **12-16** show carriage assembly **28**. With reference to **FIGS. 13, 15** and **16**, carriage assembly **28** comprises a carriage **100** having a horizontal platform **102** and a vertical frame **104** extending upwardly from the horizontal platform **102**. A linear slide **106** is mounted on base **18** rearwardly from motor support **24**, and a groove **108** in the underside of horizontal platform **102** receives linear slide **106**. Linear slide **106** and groove **108** are configured such that carriage **100** slides freely in a single linear direction between first and second positions with respect to base **18**. Horizontal platform **102** further includes a mirror support notch **110** for supporting and retaining the lower edge of second mirror **52**, and a pin **112** to which a spring is attached as described herein.

[**0040**] Vertical frame **104** includes an opening **114** having a sidewall **116** which includes an arcuate recess **118** in a central portion thereof. Vertical frame **104** also includes an angled top wall **113** against which second mirror **52** rests. A second linear slide **120** is mounted on vertical frame **104** in a groove **122** next to opening **114**. An L-shaped platform **124** is mounted on the second linear slide **120** for sliding movement in a direction normal to horizontal platform **102**. L-shaped platform **124** comprises a first leg **126** generally parallel to vertical frame **104** and a second leg **128** normal to first leg **126** and extending away from vertical frame **104** in the direction of rear **16** of base **18**. A spring mount **130** is attached to the first leg **126** of L-shaped platform **124**, and a torsion spring **132** is attached to the spring mount. Torsion spring **132** has a Z-shaped end portion, comprising, in the direction from spring mount **130** to the free end of torsion spring **132**, a first portion **134** parallel to first leg **126**, a second portion **136** normal to first portion **134** and extending though opening **114** spaced apart from sidewall **116** by a gap **140**, and a third portion **138** substantially parallel to first portion **134**. A stop **142** extends from the first leg **126** of the L-shaped platform **124** and engages second portion **136** of torsion spring **132** to hold torsion spring **132** under a preload.

[**0041**] A chuck **144** is mounted on second leg **128** of L-shaped platform **124** which has a standard lower portion with which it mates to a projection (not shown) on the second leg **128**, and an upper portion **146** adapted to mate to one or more standard industry lens blocks, such as block **148** shown in **FIG. 13**. Different chucks are used for different blocks. An adhesive pad **150** is mounted on block **148** in a well known manner so that, when the chuck **144** and block **148** are pressed against lens blank **42**, the adhesive pad **150** will stick to the lens blank **42**. The L-shaped platform **124** thus can slide linearly with respect to vertical frame **104** between a first lowered position **152**, shown in **FIGS. 12 and 13**, and a second raised position **154**, shown in **FIGS. 14 and 16**.

[**0042**] A crank arm **156** is attached to motor **26**, as best shown in **FIGS. 13, 15** and **16** and extends in a direction generally parallel to vertical frame **104** and is rotated in first and second directions, clockwise and counterclockwise, respectively, as viewed in **FIGS. 13, 15** and **16** by motor **26**. A crank pin **158** extends from crank arm **156** and into opening **114** where it engages sidewall **116**.

[**0043**] An eccentric stop **160**, as best seen in **FIGS. 13 and 15**, is mounted on platform **18** and includes a pin **162** supporting spring **164** extending between pin **162** and pin **112** on horizontal platform **102**. Spring **164** biases carriage **100** toward eccentric stop **160** and holds it against the eccentric stop **160** until crank arm **156** and motor **26** overcome the force of the spring and move the carriage **100** away from the eccentric stop **160**. Eccentric stop **160** is mounted eccentrically on base **18**, so that it can be rotated to adjust its distance from carriage **100** and hence the stopping position of carriage **100**.

[**0044**] Lens alignment and blocking device **10** is shown with carriage **100** in the alignment position in **FIGS. 2 and 13** and in the blocking position in **FIGS. 3 and 16**. The shifting of the carriage **100** between the blocking position and alignment position will be described with reference primarily to **FIGS. 13, 15** and **16**.

[**0045**] In the alignment position of **FIGS. 2 and 13**, crank pin **158** engages arcuate recess **118** in sidewall **116** of opening **114** in the vertical frame **104** and holds carriage **100** in the alignment position. In this position, spring **164** is stretched, held under tension and prevented from pulling carriage **100** toward eccentric stop **160**. Second mirror **52** is supported in mirror support notch **110** and by the angled top wall **113** of carriage **100**. Second mirror **52** is shown in **FIG. 2** and, for clarity, shown in phantom in **FIG. 13**. In this alignment position, second mirror **52** is positioned beneath central opening **38** in stage **36**.