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United States Patent [19]

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Panter et al.

[45] Date of Patent: **May 12, 1998**

[54] **HEADLIGHT AIMING APPARATUS**

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[73] Assignees: **Progressive Tool & Industries Co.**, Southfield; **Panter Master Controls, Inc.**, Mt. Morris, both of Mich.

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[22] Filed: **Sep. 4, 1996**

[51] Int. Cl.⁶ **G06K 9/00**

[52] U.S. Cl. **382/104; 382/291; 356/121**

[58] Field of Search **382/104, 278, 382/288, 291; 356/121; 348/95, 135; 364/424.034**

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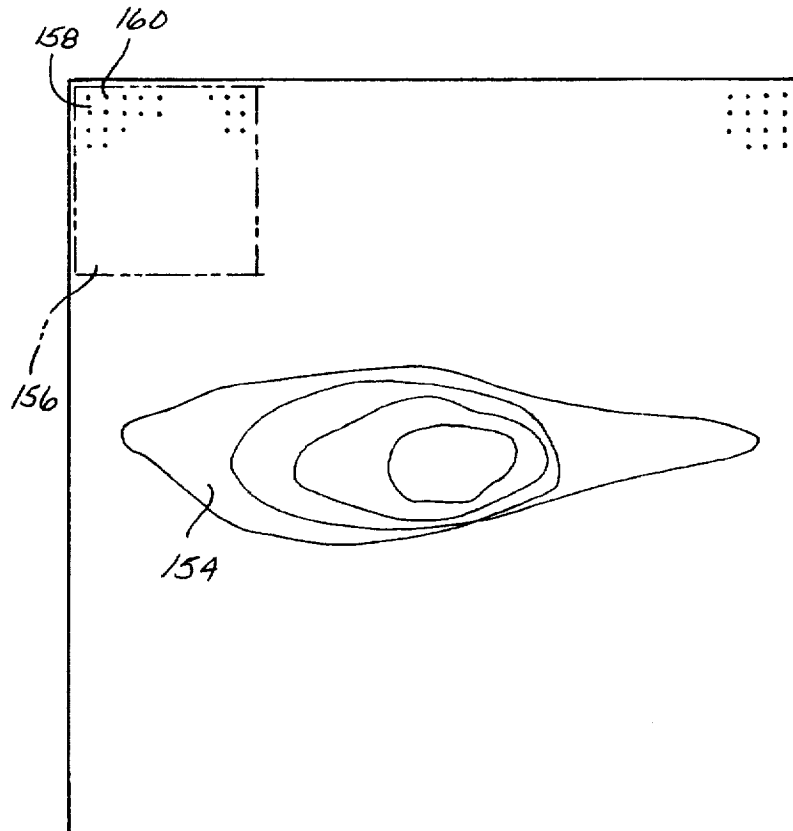
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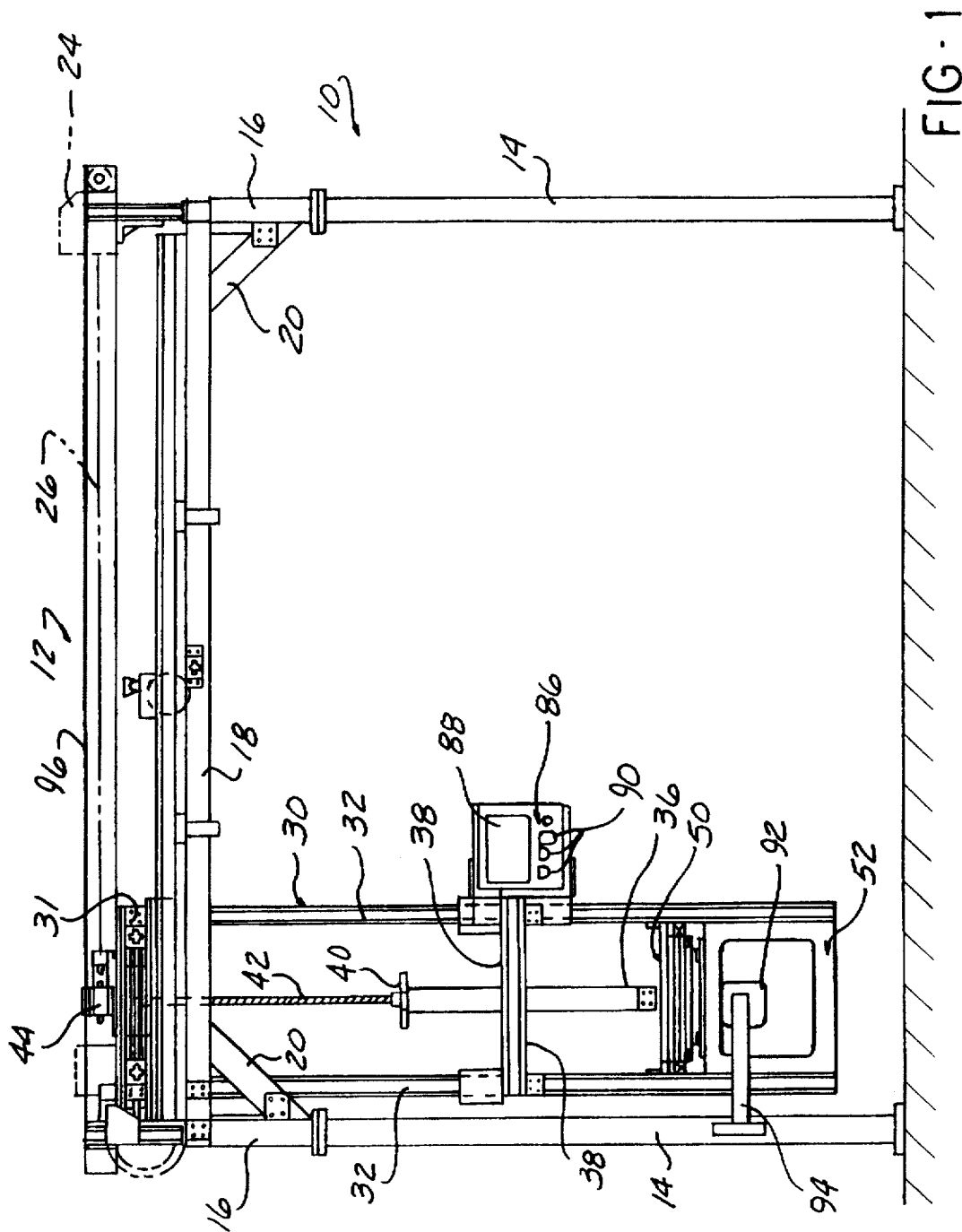
Primary Examiner—Andrew Johns
Attorney, Agent, or Firm—Young & Basile, P.C.

[57] ABSTRACT

An apparatus and method for aiming a vehicle headlight to a standard image pattern includes a frame movable relative to the vehicle. A housing carried on a vertically adjustable housing includes a lens focusing a headlight beam onto a reflective screen which reflects the beam image to a camera. A control compares the digitized image output from the camera with a standard image pattern and generates a correlation factor based on the difference between the reflected image and a standard image. Based on the difference, the control generates output signals to an adjustment device engagable with the headlight mounting frame to adjust the position of the mounting frame to reduce the difference to zero.

28 Claims, 9 Drawing Sheets





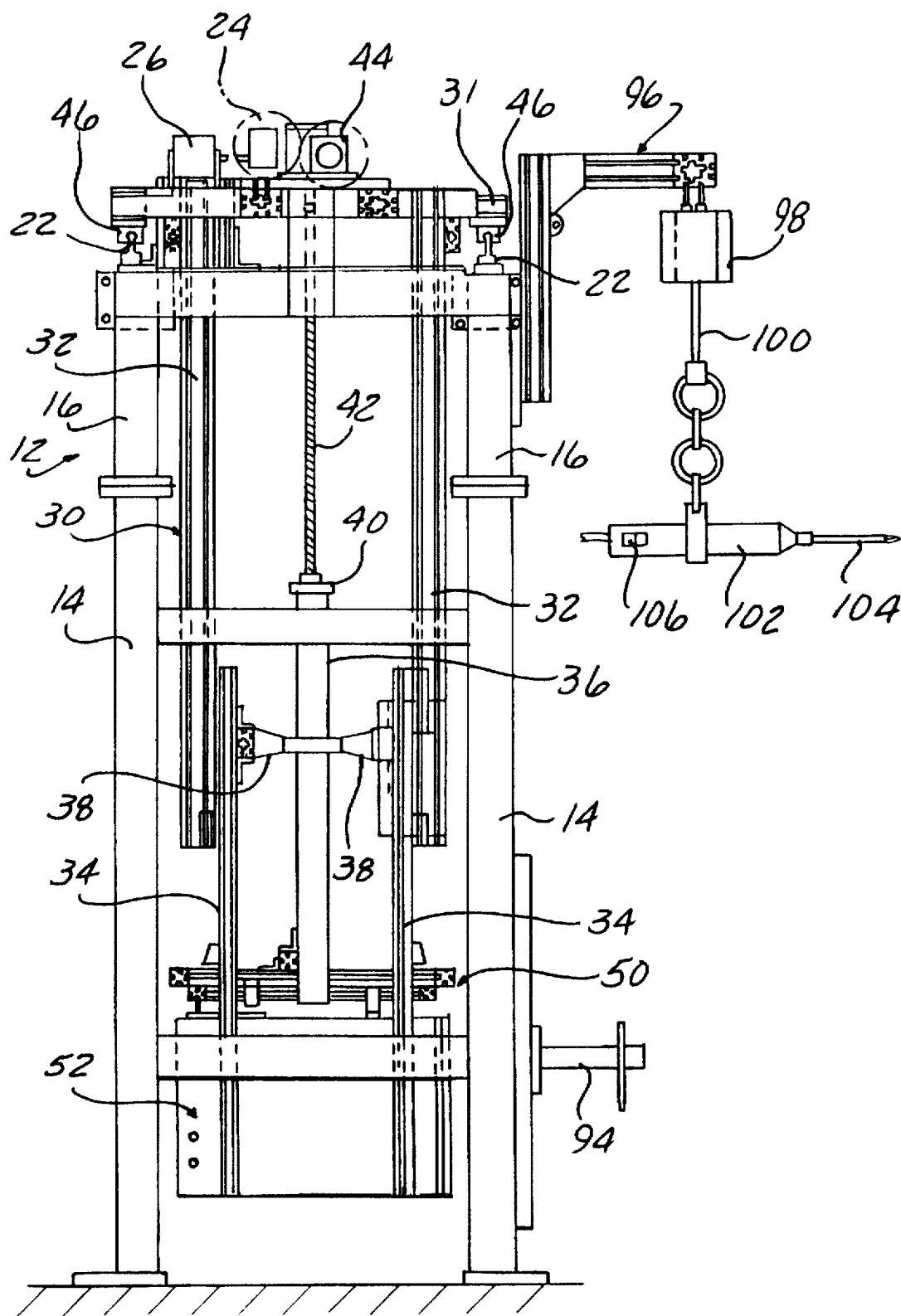


FIG-2

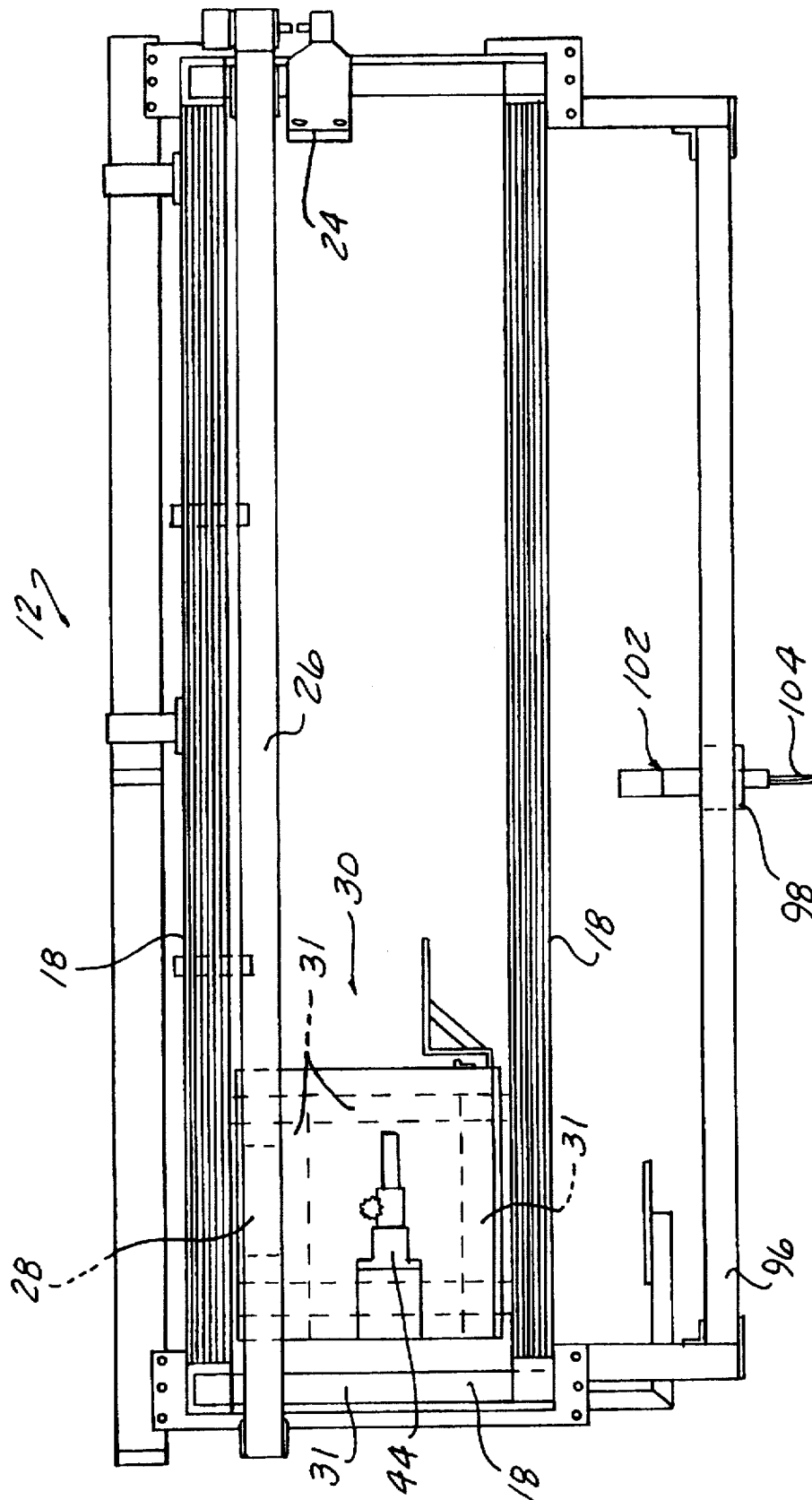


FIG - 3

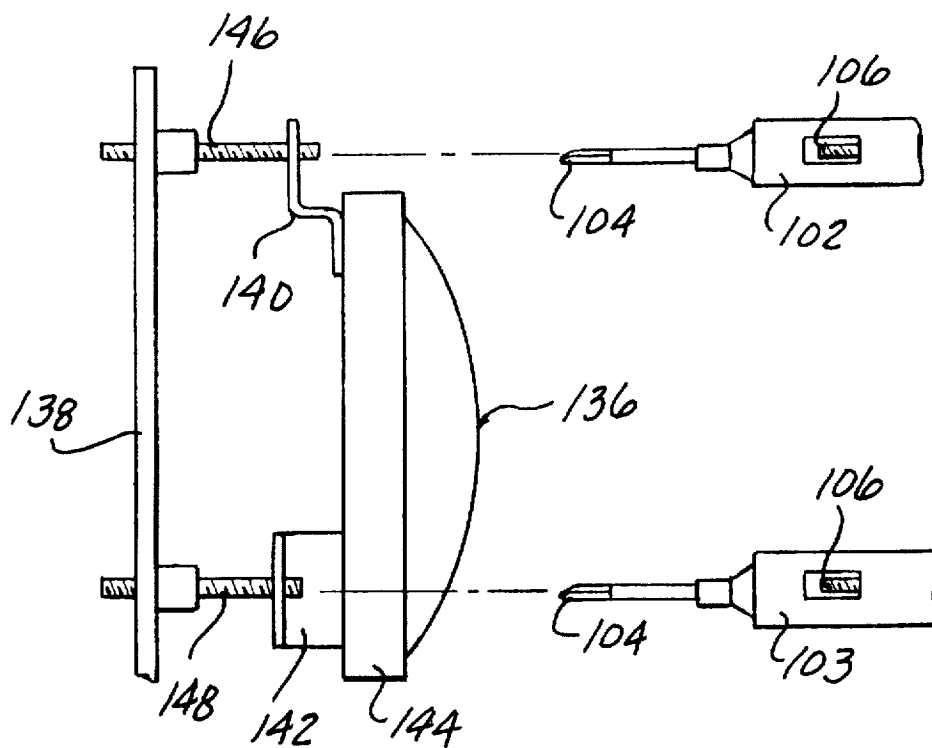


FIG - 6

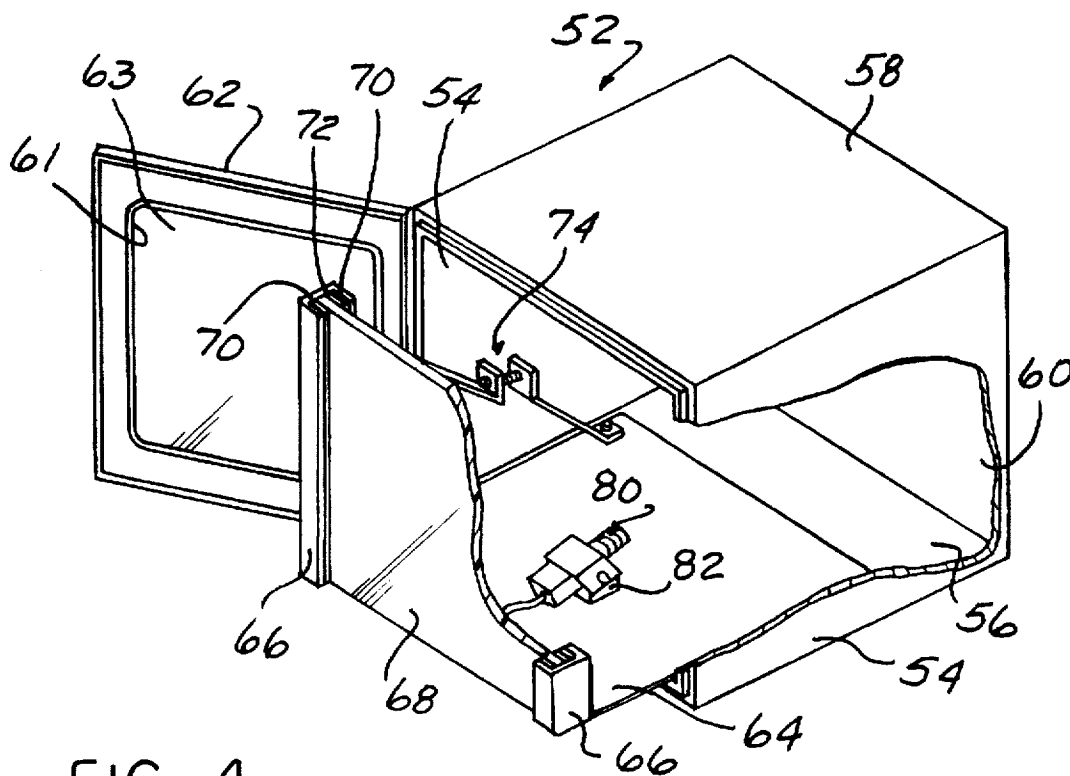


FIG - 4

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