In some embodiments, at least a portion of the mechanical layer **732** is electrically conductive and comprises the second electrode in the MEMS device **700**. In certain embodiments, portions of the support posts **736***a* and **736***b* are electrically nonconductive and insulate portions of the mechanical layer **732** from other portions of the device **700** (e.g., the optical layer **724**).

[0121] The MEMS device **700** shown in FIG. **14** comprises electrodes **756***a* and **756***b* that are disposed above the support posts **736***a* and **736***b* and that are electrically insulated from other portions of the device **700** by electrically nonconductive regions **758***a* and **758***b*. In some embodiments, the electrically nonconductive regions **758***a*, **758***b* comprise a dielectric material such as, for example, a dielectric film. In the embodiment shown in FIG. **14**, the third electrode **103** comprises the electrodes **756***a* and **756***b*. The electrodes **756***a* and **756***b* in other embodiments can have shapes and sizes that are different than shown in FIG. **14**. For example, the electrodes **756***a* and **756***b* may be relatively short in some embodiments. It is preferred, although not necessary, for at least a portion of each of the electrodes **756***a* and **756***b* to be disposed above at least a portion of the reflective element **107**.

[0122] FIG. **14** schematically illustrates the MEMS device **700** when the reflective element **107** is in a first position (the actuated or driven state) in which the reflective element **107** is in contact with a portion **113** of the device **700**. As further described above, the reflective element **107** can move to a second position (the unactuated or relaxed state) in which it is not in contact with the portion **113**. For example, the mechanical layer **732** may be fabricated from a mechanically deformable material such as a metal (e.g., aluminum) that can move between the first and second positions. When the device **700** is in the driven state, the mechanical layer **732** is deformed and comprises bending regions **760***a* and **760***b*, which are disposed between the portion **113** and the support posts **736***a* and **736***b*, respectively. In certain embodiments, the reflective element **107** (when in the driven state) is also deformed and also comprises the bending regions **760***a* and **760***b*.

[0123] In some embodiments of the device **700**, at least portions of the electrodes **756***a* and **756***b* are disposed higher than the reflective element **107** when the reflective element **107** is in the first position. In certain embodiments, at least a portion of each of the electrodes **756***a* and **756***b* protrudes away from the support posts **736***a* and **736***b*, respectively, such that these portions are disposed above (e.g., higher than) at least a portion of the reflective element **107** when the reflective element **107** is in the first position (FIG. **14**). In certain preferred embodiments, the electrodes **756***a* and **756***b* are configured so that at least a portion of the electrodes **756***a* and **756***b* is disposed directly above at least a portion of the bending regions **760***a* and **760***b*, respectively.

[0124] In some embodiments of the MEMS device **700**, voltages are applied to the electrodes **101**, **102**, and **103** so that a net electrostatic force on the reflective element **107** at least partially reduces or counteracts the adhesive force on the reflective element **107** in the first position. As discussed further above, the voltages may have various ranges of magnitudes and frequencies and may be applied to induce displacements, oscillations, and/or vibrations of the reflective element **107** to assist in moving the reflective element **107** from the first position to the second position. In certain embodiments, a voltage difference is applied between the third electrode **103** (e.g., the electrodes **756***a*, **756***b*) and the second electrode **102** (e.g., an electrically conductive portion of the mechanical layer **732**). The voltage difference can have various ranges of magnitudes and frequencies and can comprise one or more relatively short duration impulses. In various embodiments, the third electrode **103** is electrically connected to one or more voltage sources by traces or wires that lead off of the display array **30** to the array driver **22** (see FIG. **2**). In one embodiment of the device **700**, the array driver **22** may use a driver circuit generally similar to the row and column driver circuits **24** and **26** to communicate a suitable electrical signal to the third electrode **103**.

[0125] The voltage difference applied between the second and third electrodes **102** and **103** causes net electrostatic forces indicated by arrows **764***a* and **764***b* to act on the reflective element **107**. In certain preferred embodiments, portions of the electrodes **756***a* and **756***b* protrude directly above at least portions of the bending regions **760***a* and **760***b* so that the net electrostatic forces **764***a* and **764***b* have reasonably large perpendicular components in the bending regions **760***a* and **760***b* that tend to pull the reflective element **107** away from the portion **113**. In certain such embodiments, the electrostatic forces **764***a* and **764***b* may at least partially reduce or counteract the adhesive force and may assist in moving the reflective element **107** from the first position to the second position. Without subscribing to any particular theory, the net electrostatic force **764***a* applied in the bending region **760***a* may induce crack opening at an edge of a contact interface between the reflective element **107** and the portion **113**. The crack may propagate across the contact interface, assisting the reflective element **107** to peel away from the portion **113** and to move from the first position to the second position. The net electrostatic force **764***b* applied in the bending region **760***b* may act in a similar manner, and in certain embodiments cracks may open at opposing edges of the contact interface and propagate across the interface. Although it is preferred that at least two electrodes **756***a* and **756***b* be used to reduce or counteract the adhesive force on the reflective element **107**, in other embodiments different configurations, orientations, and numbers of electrodes (e.g., one) can be used, for example, to initiate crack opening and facilitate release of the reflective element **107**.

[0126] Embodiments of the MEMS device **700** can provide certain advantages. For example, the magnitudes of the electrostatic forces **764***a*, **764***b* at the bending regions **760***a*, **760***b* needed to facilitate release from the driven to the undriven state typically are much smaller than if the forces were applied to a central region of the reflective element **107**. Accordingly, smaller voltage differences (e.g., between the second and third electrodes **102** and **103**) can be applied to the device **700**. Moreover, in some embodiments, the electrodes **756***a* and **756***b* reduce electrostatic instability and collapse of the mechanical layer **732** onto the dielectric layer **728**, which can be a problem in some closing-gap devices. Further, in certain embodiments, voltage impulses having a duration that is shorter than a typical release time of the device **700** can be used to facilitate movement of the reflective element **107** from the driven state to the undriven state.

[0127] The MEMS devices disclosed herein may be fabricated using suitable micromachining processes such as, for example, selective deposition and etching as described in the heretofore incorporated U.S. patent application Ser. No.