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(54) **HITLESS MXN WAVELENGTH SELECTIVE SWITCH**

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(51) **Int. Cl.**
H04J 14/00 (2006.01)
G02B 6/35 (2006.01)
G02B 5/08 (2006.01)
H04B 10/12 (2006.01)

(52) **U.S. Cl.** **398/48**; 398/45; 398/43; 398/42; 385/18; 385/16; 375/130

(58) **Field of Classification Search** 398/43, 398/45, 48
See application file for complete search history.

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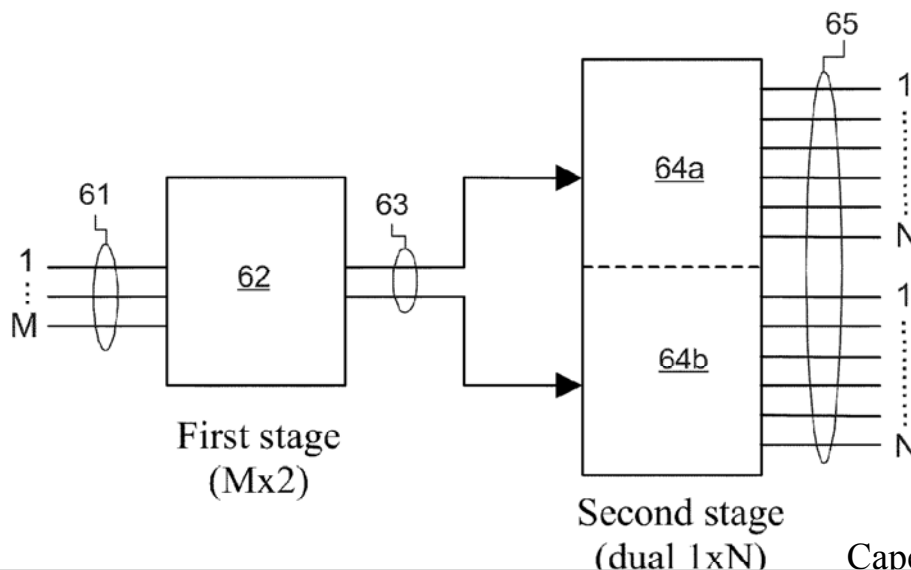*Assistant Examiner* — Oommen Jacob
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(57)   **ABSTRACT**

A wavelength selective switch (WSS) based on an array of MEMS mirrors tiltable in 1-dimension about only one axis exhibits "hitting" or unwanted port connections during switching. Two WSS's can be cascaded to create M×N switching functionality in a hitless manner by the inclusion of block ports at specified positions in one or both of the WSS's. Greater use efficiency of ports can be achieved if quasi-hitless performance is acceptable.
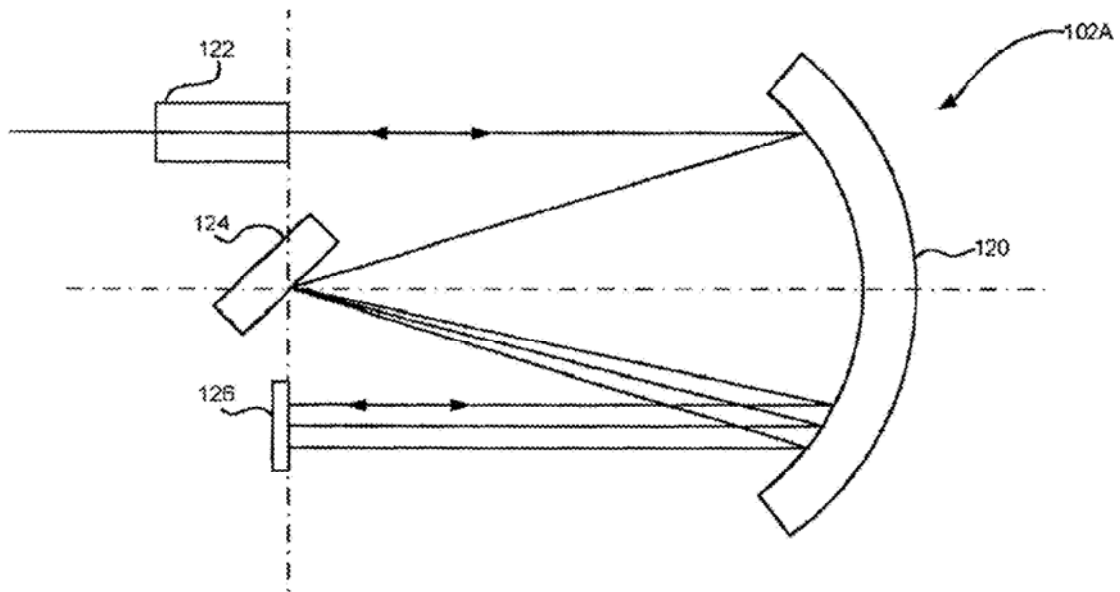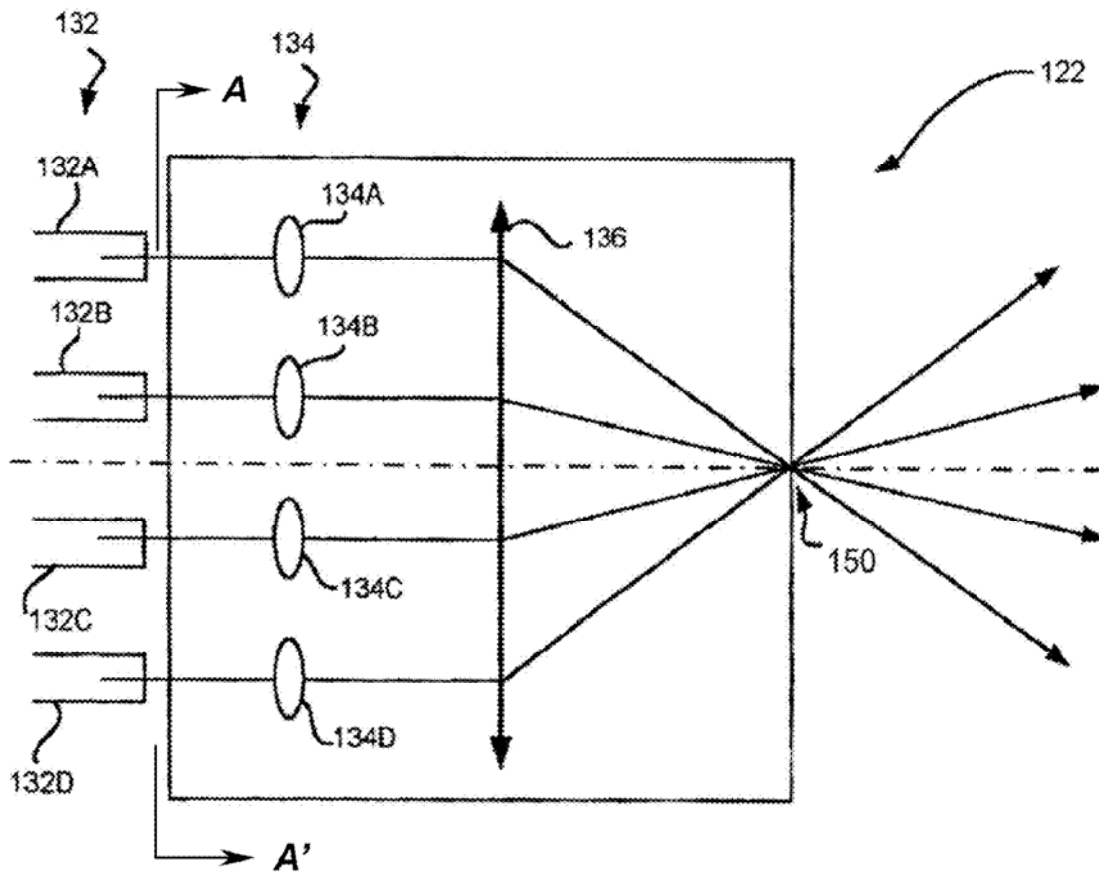
1 Claim, 15 Drawing Sheets

First stage
(Mx2)

Second stage
(dual 1xN)

Capella 2034

Fig. 1a
PRIOR ART

Fig. 1b
PRIOR ART

Fig. 1c
PRIOR ART

First stage
(Mx1)

Second stage
(1xN)

Fig. 2a
PRIOR ART

23
27
21a
21b
21c
21d
21e

26

○ Input or output port
◯ Common port
● Block port

Fig. 2b

23
27
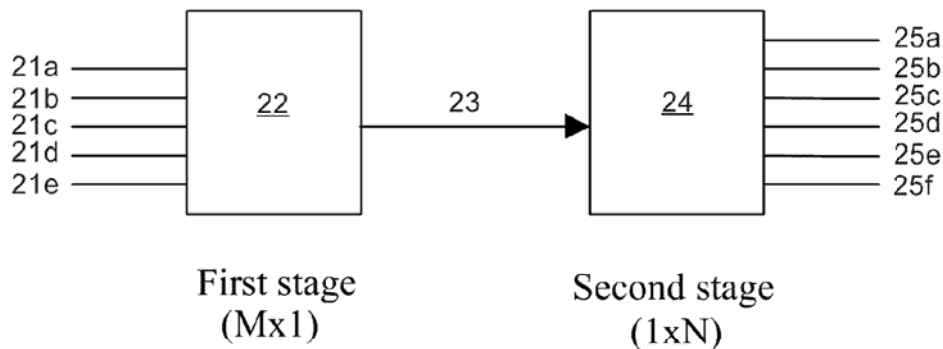21a
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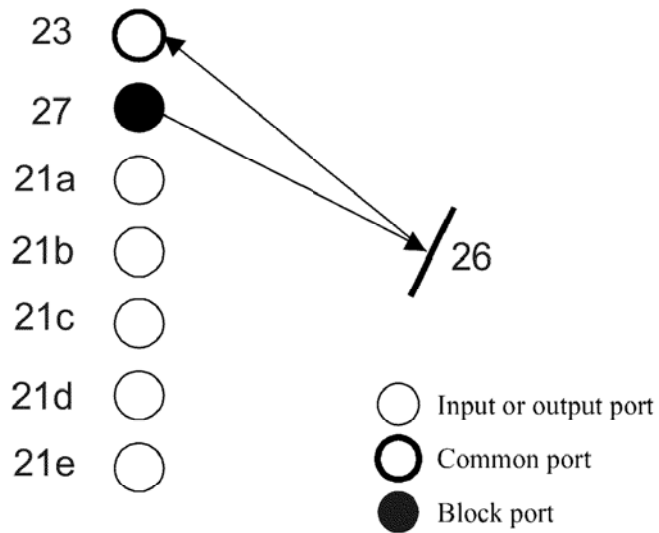21e

26

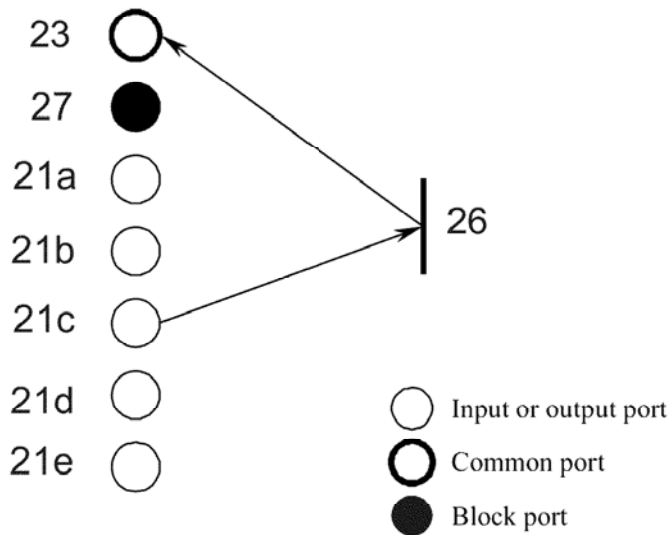○ Input or output port
◯ Common port
● Block port
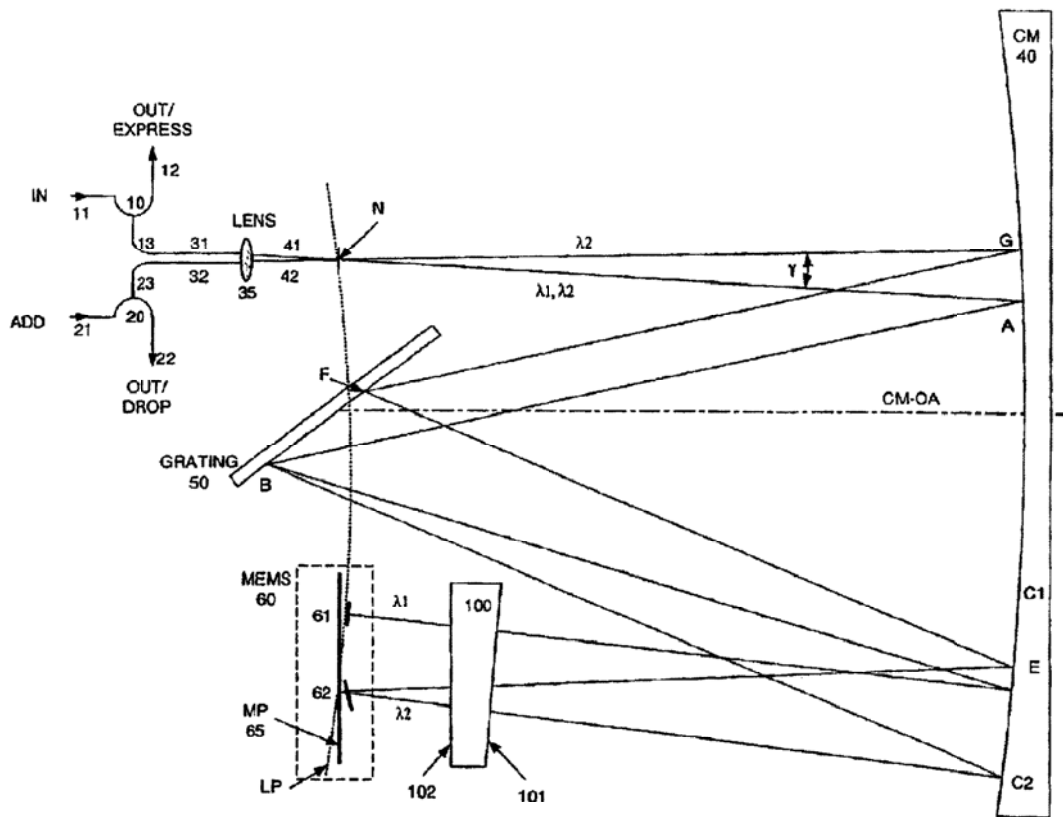
Fig. 2c

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