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- (71) **Applicant:** 3M INNOVATIVE PROPERTIES COMPANY [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).
- (72) **Inventors; and**
- (71) **Applicants :** LOPEZ, Waldo L. [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US). TAIT, Bruce E. [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US). ROSKA, Fred J. [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US). NEWHOUSE, Kevin B. [US/US]; 3M Center, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).
- (74) **Agents:** JORDAN, Robert H. et al.; 3M Center, Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, Minnesota 55133-3427 (US).

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- (54) **Title:** VACUUM EFFECTOR AND METHOD OF USE

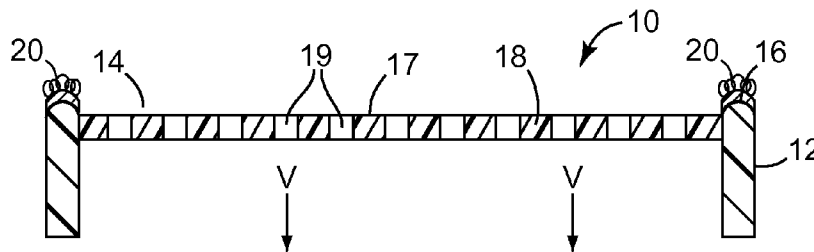


FIG. 3

- (57) **Abstract:** Vacuum effectors comprising: (a) a wall defining an enclosed opening and having a rim defining a lip plane; (b) a negative pressure source; (c) a shroud covering the rim; and (d) optionally a permeable support member spanning the enclosed opening, the support member being substantially planar and recessed a selected depth from the lip plane. Also, methods of manipulating work pieces using such vacuum effectors.