

Title (en)  
ARTICLE MANIPULATOR FOR ROBOT

Publication  
**EP 0192994 B1 19891129 (EN)**

Application  
**EP 86101277 A 19860131**

Priority  
US 70577785 A 19850226

Abstract (en)  
[origin: EP0192994A1] An article manipulator (10) for use with an industrial robot includes an upper frame (28) adapted for fastening to the industrial robot and a lower frame (12) coupled to the upper frame. A pair of lifting members (16) operable for lifting an article are connected to the lower frame. At least one vacuum cup (62, 64) is coupled to the frame and is restrained to move in a plane substantially parallel to the lifting members. Sensing mechanisms (18, 20, 22) are provided for sensing the position of an article relative to the manipulator and for generating electrical signals which are utilized by a controller to enable the vacuum cups to grip the article at one side and move the article onto the lifting members. Subsequently, the manipulator transfers the articles to a second position. The manipulator is suited for depalletizing and/or palletizing parallelepiped shape articles.

IPC 1-7  
**B66C 1/24**; **B66F 9/12**

IPC 8 full level  
**B66F 9/18** (2006.01); **B25J 15/06** (2006.01); **B66C 1/24** (2006.01); **B66F 9/075** (2006.01); **B66F 9/12** (2006.01); **B66F 9/19** (2006.01); **B66F 9/24** (2006.01)

CPC (source: EP)  
**B66C 1/24** (2013.01); **B66F 9/0755** (2013.01); **B66F 9/12** (2013.01)

Cited by  
FR2951712A1; EP2384864A1; US5953812A; US5004399A; CN108927821A; EP0244984A3; US6113342A; US5855467A; GB2293362A; US5664932A; GB2293362B; US8647043B2; WO2011048576A1; US9440828B2

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