

## Title (en)

Remote controlled apparatus for cleaning of outer window surfaces of high rise buildings and building facades

## Title (de)

Ferngesteuerte Vorrichtung zum Reinigen der äußeren Fensterflächen von Hochhäusern und Gebäudefassaden

## Title (fr)

Appareil télécommandé pour le nettoyage de surfaces extérieures de fenêtre d'immeubles de grande hauteur et de façades d'immeubles

## Publication

**EP 2191758 A1 20100602 (EN)**

## Application

**EP 08170035 A 20081126**

## Priority

EP 08170035 A 20081126

## Abstract (en)

The invention disclosed relates to the remote cleaning of outer surfaces of windows or facades of high rise buildings without the need for workers located outside the building wall. In fact, the cleaning operation effectively duplicates the conventional manual cleaning operation, such that a minimum of cleaning liquid is used, and no means is required for removal of excess cleaning liquid. The apparatus comprises a rectangular master frame and a parallelogram sub-frame contained therein, suspended from the top of the building to a position opposite a window to be cleaned. A novel cleaning tool, including mechanical scrubbing means e.g a brush and mechanical scraping means e.g. squeegee and a washing liquid spray means, is carried on an insertion tool attached to the parallelogram sub-frame, and brought to bear against the window outer surface to be cleaned, as required. The brush and squeegee are rotatable and moveable in any desired planar motion in the plane of the window surface, which is not possible with any known remotely operated window cleaning apparatus. The entire cleaning operation is effected and monitored by an operator in a safe remote location, for example, by means of closed circuit television.

## IPC 8 full level

**A47L 1/02** (2006.01)

## CPC (source: EP)

**A47L 1/02** (2013.01); **E04G 23/002** (2013.01)

## Citation (applicant)

- US 4025984 A 19770531 - HOENER JR RALPH H
- US 4198724 A 19800422 - FISHER HARRY S [US], et al
- US 7007334 B2 20060307 - THURNHER JULIUS [AT]

## Citation (search report)

- [DA] US 7007334 B2 20060307 - THURNHER JULIUS [AT]
- [DA] US 4198724 A 19800422 - FISHER HARRY S [US], et al
- [A] EP 0271454 A2 19880615 - ALAN SRL [IT]
- [A] US 4955924 A 19900911 - GORMAN DANIEL J [CA]
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## Cited by

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## Designated contracting state (EPC)

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## Designated extension state (EPC)

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## DOCDB simple family (application)

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