

Title (en)
Enhanced operation toilet.

Title (de)
Toilette mit verbesserter Wirkung.

Title (fr)
Toilettes avec opération améliorée.

Publication
EP 0591558 A1 19940413 (EN)

Application
EP 92106809 A 19920421

Priority
EP 92106809 A 19920421

Abstract (en)
A water saver toilet is provided, of the type that applies a vacuum to the toilet bowl outlet to assist flushing, which effectively uses the vacuum and which can be of low height. The toilet bowl outlet includes upper and lower trap devices (44, 50 in Fig. 2) connected by a trapway (46), with the lower trap device being initially unobstructed. At the beginning of flushing, the initial water flow causes obstruction of the lower trap device to air flow, and a vacuum is then applied to the trapway to pull out water and debris from the toilet bowl. One vacuum source (Fig. 3) includes a diaphragm device (76) which separates a water chamber (82) from a vacuum chamber (80). The water chamber is initially filled with water, which is rapidly emptied during flushing, causing the diaphragm device to rapidly fall and produce a vacuum in the vacuum chamber that is connected to the trapway. A biasing device (84) allows the water chamber to deliver water at a considerable pressure, regardless of the level of the water chamber with respect to the toilet bowl. Another vacuum source (Fig. 7) includes a water powered actuator (158) that receives water from a pressured water pipe at the beginning of flushing, to rapidly raise a vacuum diaphragm (170) that produces a vacuum in a vacuum chamber (172) which is connected to the trapway. <IMAGE>

IPC 1-7
E03D 5/00

IPC 8 full level
E03D 5/00 (2006.01)

CPC (source: EP)
E03D 5/00 (2013.01)

Citation (search report)
• [Y] US 4115883 A 19780926 - DAUVERGNE HECTOR A
• [Y] US 2055490 A 19360929 - GROENIGER WILLIAM C
• [A] GB 502333 A 19390315 - JOHN BOLDING & SONS LTD, et al
• [A] EP 0011449 A1 19800528 - INT WATER SAVER TOILET [CA]
• [A] DE 2116991 A1 19711021
• [E] US 5142712 A 19920901 - HENNESSY ARNOLD [CA]

Cited by
AU780193B2; CN109252565A; CN114232743A; WO0125555A1

Designated contracting state (EPC)
AT BE CH DE DK ES FR GB GR IT LI LU MC NL PT SE

DOCDB simple family (publication)
EP 0591558 A1 19940413

DOCDB simple family (application)
EP 92106809 A 19920421