Title (en)

RECIPROCATING DRIVE ASSEMBLY FOR HOUSEHOLD APPLIANCE

Publication

EP 0151504 B1 19881130 (DE)

Application

EP 85200141 A 19850207

Priority

DE 3404299 A 19840208

Abstract (en)

[origin: EP0151504A2] 1. A drive mechanism for a vibration appartus, in particular a small domestic apparatus such as a dry shaver or a massage device, in which the rotor shaft of a rotary drive motor (5) drives a cam-and-follower mechanism, which converts the motor rotation into an oscillation, cam-following rollers (31, 31a) being arranged on a driven end of a pivotal arm (25) which is pivotable about a central portion, and a vibratory part (39) to be driven being arranged on the driving end (35) of the pivotal arm, characterized in that two rollers (31, 31a) simultaneously follow the profile (33, 333, 433) of a cam (21, 321, 421) which rotates with the rotor shaft, the movement impressed on the pivotal arm (25) by the first roller (31) is taken off the cam geometrically shifted through a number of degrees of rotation of the cam (21, 321, 421) equal to alpha0 = 360 degrees/2n or an odd multiple thereof relative to the movement impressed on the pivotal arm (25) by the second roller (31a), n being the frequency multiplication factor of the oscillation frequency of the rollers (31, 31a) and the vibratory part (39) relative to the angular frequency of the cam, the excursion impressed on the pivotal arm (25) by the rollers (31, 31a) during the follower movement depends on the angle of rotation alpha of the cam (21, 321, 421) to the same extent for both rollers (31, 31a), allowance being made for the roller diameter, oscillation amplitude, oscillation waveform, and the average distance (b) between the cam axis (19) and the roller axis (29, 29a), the cam (21, 321, 421) is dimensioned in such a way that the rollers (31, 31a) experience a periodic excursion (x1 and x2 respectively) which depends on the angle of rotation alpha of the cam, the fundamental frequency of the oscillation being n times as high as the angular frequency of the cam (21, 321, 421) and the symmetry requirements for the excursions x1 and x2 being : x1 = - x2 with x2 = f(alpha), x2 = f(alpha +- alpha 0), and alpha0 = 360 degrees . (2mu + 1/2n), mu = 0, 1, 2, ... where n is preferably 1, 2, 3 or 4, and alpha0 is the angular spacing between the two rollers (31, 31a).

IPC 1-7

B26B 19/28

IPC 8 full level

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CPC (source: EP)

B06B 1/10 (2013.01); **B26B 19/28** (2013.01); **B26B 19/282** (2013.01)

Cited by

EP0212719A3; US4791327A; GB2290739A; US5685077A; GB2290739B

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EP 0151504 A2 19850814; **EP 0151504 A3 19860528**; **EP 0151504 B1 19881130**; AT E38954 T1 19881215; DE 3404299 A1 19850808; DE 3404299 C2 19860717; DE 3566511 D1 19890105; JP S60241486 A 19851130

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