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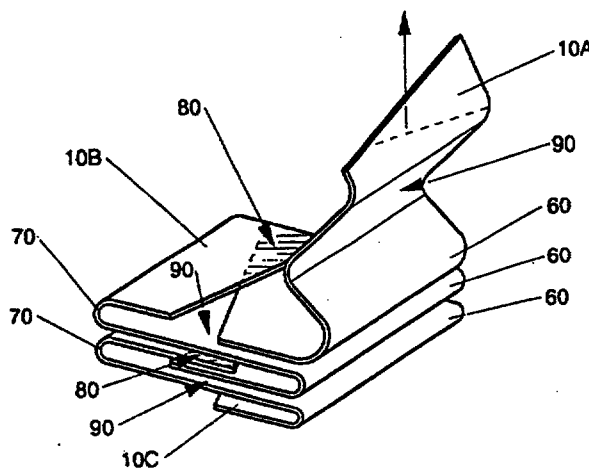
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(21) International Application Number: PCT/US94/08469 (22) International Filing Date: 25 July 1994 (25.07.94) (30) Priority Data: 08/108,206 17 August 1993 (17.08.93) US (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventor: MUCKENFUHS, Delmar, Ray; 7160 Kyles Station Road, Middletown, OH 45044 (US). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45202 (US).		(81) Designated States: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> This Sheet Has Been Replaced 

(54) Title: IMPROVED POP-UP TOWEL DISPENSING SYSTEM



(57) Abstract

The present invention pertains to improved pop-up dispensing systems in which edge portions (40, 50) of adjacent towels are non-parallel when the individual towel sheets (10) are interleaved and folded. This new configuration provides improved pop-up dispensing reliability by providing a predictable, repeatable separation process. The overlapped area (80) formed by the overlapping end edges (40, 50) is tapered such that there is a point across the sheet width with the greatest overlap in the direction of the pulling force and a point across the sheet width with the least overlap in the direction of the pulling force. This configuration allows the area of maximum overlap to pull the next sheet through the dispensing aperture at the same time that the sheet separation process is starting to take place at the area of least overlap. The separation process begins at the point of least overlap (100) and proceeds across the overlapping area (80) along a "separation front" toward the point of greatest overlap. When the overlapping area (80) is reduced to the extent that there is insufficient overlapping area to sustain the shear forces exerted, complete separation of the two sheets (10) will occur. The area of overlap (80), length of the separation front, and amounts of overlap at the point of greatest overlap can all be tailored to provide desired separation characteristics for a particular aperture size, substrate, moistening agent, and moisture loading.