

Title (en)

Method and apparatus for manufacturing paper cushioning members.

Title (de)

Verfahren und Vorrichtung zum Herstellen von Füllmaterial aus Papier.

Title (fr)

Procédé et dispositif pour la fabrication de matière de garnissage à partir de papier.

Publication

**EP 0602580 A1 19940622 (EN)**

Application

**EP 93120077 A 19931213**

Priority

- JP 13273493 A 19930511
- JP 35357692 A 19921214

Abstract (en)

Disclosed are a method and apparatus for manufacturing paper cushioning members, which ensure continuous mass-production of paper balls, made by crumpling a sheet or sheets of work paper, and permit the use of the paper balls as cushions or packings for transporting objects. The method and apparatus are designed to form circumferential recesses (3) and projections (4) each of a given width on and around a surface of each of a pair of elongated roller members (1, 2) and engaging the recesses (3) and projections (4) of one of the roller members (1, 2) with the projections (4) and recess (3) of the other roller member respectively; form link-portion forming recesses (6) each in a part of a circumferential surface of each of the projections (4) in a horizontal direction or at a predetermined angle ( $\theta$ ) to the horizontal direction; insert a single sheet or plural sheets of work paper (P') to be processed between the pair of roller members (1, 2) and alternately forming cuts (7) and link portions (71, ..., 7n) along the circumferential recesses (3) and projections (4) on the sheet or sheets of work paper (P'), by using circumferential edges of the circumferential recesses (3) and projections (4) of the roller members (1, 2); and stretch the sheet or sheets of work paper (P) after alternate formation of the cuts (7) and link portions (71, ..., 7n) in a direction perpendicular to a cutting direction, thus forming a net (7'). <IMAGE>

IPC 1-7

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Citation (search report)

- [A] FR 2080256 A5 19711112 - DURAND JEAN, et al
- [A] US 1344826 A 19200629 - SEXTON JAMES P
- [A] US 4650456 A 19870317 - ARMINGTON STEVEN E [US]
- [A] US 1850543 A 19320322 - GERSMAN HARVEY M
- [A] US 3162942 A 19641229 - CHRISTMAN CHARLES W
- [A] US 4621397 A 19861111 - SCHRENK HANNES [AT]
- [A] US 1384376 A 19210712 - AREY FRED C

Citation (third parties)

Third party :

- DE 3112639 A1 19821007 - SCHLEICHER CO FEINWERKTECH [DE]
- DE 8705031 U1 19880804

Cited by

US5910079A; FR2796864A1; EP0669176A3; EP0813954A1; CN105479940A; DE4403054A1; EP0667304A3; DE102016114719A1; WO2015103251A1; WO9916614A1; WO2006103653A3

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