

Title (en)
WINDING SPINDLE DRIVE

Publication
EP 0094483 B1 19870902 (DE)

Application
EP 83102495 A 19830314

Priority
US 37913482 A 19820517

Abstract (en)
[origin: US4548366A] In a filament winding machine with a directly driven chuck and a friction roll which contacts the package during winding, the chuck is held spaced from the roll in an initial phase of winding so that first contact between a package and the roll is made by build-up of the package.

IPC 1-7
B65H 54/44; **B65H 54/40**

IPC 8 full level
B65H 54/02 (2006.01); **B65H 54/40** (2006.01); **B65H 54/46** (2006.01); **B65H 54/52** (2006.01); **B65H 59/38** (2006.01)

CPC (source: EP US)
B65H 54/40 (2013.01 - EP US); **B65H 54/52** (2013.01 - EP US); **B65H 59/384** (2013.01 - EP US); **B65H 2701/31** (2013.01 - EP US)

Cited by
US5649670A; EP0244653A3; US4986483A; EP0391101A1; US5082191A; US4566642A; KR101231830B1

Designated contracting state (EPC)
CH DE FR GB IT LI

DOCDB simple family (publication)
EP 0200234 A2 19861105; **EP 0200234 A3 19870930**; **EP 0200234 B1 19891011**; DE 3373298 D1 19871008; DE 3381895 D1 19901025; EP 0094483 A1 19831123; EP 0094483 B1 19870902; EP 0182389 A2 19860528; EP 0182389 A3 19871007; EP 0182389 B1 19900919; JP 2514493 B2 19960710; JP 2694167 B2 19971224; JP H05278938 A 19931026; JP H05319691 A 19931203; JP H0534268 B2 19930521; JP H07106828 B2 19951115; JP H0826596 A 19960130; JP S58202261 A 19831125; US 4548366 A 19851022

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EP 86106332 A 19830314; DE 3373298 T 19830314; DE 3381895 T 19830314; EP 83102495 A 19830314; EP 85115378 A 19830314; JP 18767095 A 19950703; JP 20681491 A 19910819; JP 33631392 A 19921216; JP 6849683 A 19830420; US 37913482 A 19820517