

669915 P/00/001  
Section 29

AUSTRALIA  
Patents Act 1990

**PATENT REQUEST : STANDARD PATENT**

I/We, being the person(s) identified below as the Applicant(s), request the grant of a Standard Patent to the person(s) identified below as the Nominated Person(s), for an invention described in the accompanying complete specification.

**Applicant(s) and Nominated Person(s):** FERAG AG

**Address:** ZURICHSTRASSE 74  
8340 HINWIL  
SWITZERLAND

**Invention Title:** METHOD ~~AND APPARATUS~~ FOR PRODUCING TUBULAR PACKS FROM PRINTED PRODUCTS

**Name(s) of Actual Inventor(s):** HANS-ULRICH STAUBER

**Address for Service:** GRIFFITH HACK & CO  
509 ST KILDA ROAD  
MELBOURNE VIC 3004

**Attorney Code:** HA

**BASIC CONVENTION APPLICATION DETAILS**

**Application No:** 02 849/92-5      **Country:** CH      **Application Date:** 10 September 1992

Drawing number recommended to accompany the abstract: 1

DATED: 3 August 1993

FERAG AG

GRIFFITH HACK & CO.



Patent Attorney for and  
on behalf of the Applicant



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**NOTICE OF ENTITLEMENT**

I/We FERAG AG

of ZURICHSTRASSE 74  
8340 HINWIL  
SWITZERLAND

being the applicant(s) in respect of an application for a patent for an invention entitled  
METHOD AND APPARATUS FOR PRODUCING TUBULAR PACKS FROM PRINTED  
PRODUCTS, state the following:

1. The nominated person(s) has/have, for the following reasons, gained entitlement  
from the actual inventor(s):

THE NOMINATED PERSON WOULD BE ENTITLED TO  
HAVE ASSIGNED TO IT A PATENT GRANTED TO THE  
ACTUAL INVENTOR IN RESPECT OF THE SAID  
INVENTION.

2. The nominated person(s) has/have, for the following reasons, gained entitlement  
from the basic applicant(s) listed on the patent request:

THE APPLICANT AND NOMINATED PERSON IS THE  
BASIC APPLICANT.

3. The basic application(s) listed on the request form is/are the first application(s)  
made in a Convention country in respect of the invention.

DATE: 3 August 1993

FERAG AG

GRIFFITH HACK & CO.



Patent Attorney for and  
on behalf of the applicant(s)



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(12) PATENT ABRIDGMENT (11) Document No. AU-B-44389/93  
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 669915

- (54) Title  
METHOD FOR PRODUCING TUBULAR PACKS FROM PRINTED PRODUCTS
- International Patent Classification(s)  
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2849/92 10.09.92 CH SWITZERLAND
- (43) Publication Date : 17.03.94
- (44) Publication Date of Accepted Application : 27.06.96
- (71) Applicant(s)  
FERAG AG
- (72) Inventor(s)  
HANS-ULRICH STAUBER
- (74) Attorney or Agent  
GRIFFITH HACK & CO , GPO Box 1285K, MELBOURNE VIC 3001
- (56) Prior Art Documents  
US 4688368  
US 5022523
- (57) Claim

1. A method of producing a tubular pack of articles in a scale flow formation with an additional product in the center of the pack comprising the steps of conveying a plurality of flat, bendable articles in a scale flow formation in a direction toward a winding device with a mandrel having a central axis and an outer surface with a predetermined circumference and with a first face of the scale flow positioned so as to be toward the mandrel outer surface when the scale flow formation is wound on the mandrel and a second face positioned to be away from the mandrel when so wound, the formation having a first article with a leading edge and a last article with a trailing edge; providing adjacent the scale flow formation an additional flat and bendable product which differs from the plurality of articles, the additional product having a leading edge, positioning the additional product adjacent the first face of the formation and positioning the leading edge of the additional product (a) upstream of the leading edge of the first article a distance no greater than the circumference of the mandrel, (b) aligned with the leading

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edge of the first article, or (c) downstream of the leading edge of the first article, providing an elongated protective element having a leading edge and a trailing edge, positioning the protective element with the leading edge thereof adjacent the second face of the imbricated formation and the trailing edge of the protective element upstream of the trailing edge of the scale flow in the direction of conveyance, winding the scale flow formation together with the additional product and protective element onto the mandrel to form a tubular pack with the additional product against the mandrel outer surface and radially within the articles of the scale flow, and axially removing the tubular pack from the mandrel.

AUSTRALIA  
Patents Act 1990

COMPLETE SPECIFICATION  
STANDARD PATENT

Applicant(s):

FERAG AG

Invention Title:

METHOD ~~AND APPARATUS~~ FOR PRODUCING  
TUBULAR PACKS FROM PRINTED PRODUCTS

The following statement is a full description of this  
invention, including the best method of performing it known  
to me/us:



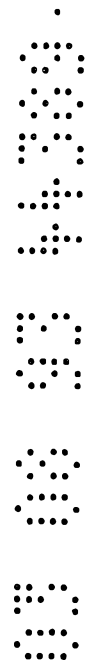
Method ~~and apparatus~~ for producing tubular packs from printed products.

The invention is in the field of the further processing of printed products and relates to a method and an apparatus according to the preambles of the corresponding claims for producing tubular packs, which contain wound, bendable, flat articles and in particular a wound scale formation of printed products, and which are enveloped with a protective/holding element. The invention also relates to a pack according to the preamble of the corresponding independent claim produced using the said method.

According to the prior art flexible, flat articles or objects and in particular printed products are wound or rolled to form tubular packs for transportation purposes. During the same winding process the packs are conventionally provided with a protective/holding element in the form of a paper sheet or a plastic sheet portion. Advantageously such packs are not opened in the true sense of the term and instead the printed products are individually removed by action in the pack cavity. The protective/holding element is not destroyed and the scale formation is not pushed together to form a stack. Quite apart from the time and costs saved by the removal from the interior of the pack, the products are also protected for a longer period against external influences such as wet and dirt by means of the protective/holding element.

Methods and apparatuses for producing such packs are e.g. described in European Patent 243 906 (F225) and European patent application 474 999 (F337) of the same applicant.

If, in addition to the printed products contained in scale formation form, the pack is to contain additional information relating to the complete pack or the printed products contained therein, this can be simply printed on the protective/holding element or, if the latter is transparent, can be wrapped directly under the same.



Although this can be easily carried out during the production process, it suffers from the disadvantage that the carrier of the additional information can only be separated from the pack when the final printed product has been removed therefrom. If the carrier of the additional information is e.g. a kiosk poster, this is naturally unacceptable, because such a poster must naturally be displayed before the printed products are offered for sale.

The problem of the invention is to extend the method and apparatus for producing tubular packs of printed products enveloped by a protective/holding element in such a way that the packs contain a complementary or additional product in such a way that the latter can be removed from the interior of the pack prior to the printed products of the scale formation. The additional product comprises one or more bendable, flat articles, particularly printed products, which can be one-sided, several-sided, folded, stitched, etc. The method and apparatus must be such that the format of the additional product is freely selectable. the apparatus for performing the method must be simple and must differ from corresponding prior art apparatuses only through an additional partial device.

This problem is solved by the present invention which comprises a method of producing a tubular pack of articles in a scale flow formation with an additional product in the center of the pack comprising the steps of conveying a plurality of flat, bendable articles in a scale flow formation in a direction toward a winding device with a mandrel having a central axis and an outer surface with a predetermined circumference and with a first face of the scale flow positioned so as to be toward the mandrel outer surface when the scale flow formation is wound on the mandrel and a second face positioned to be away from the mandrel when so wound, the formation having a first article with a leading edge and a last article with a trailing



edge; providing adjacent the scale flow formation an additional flat and bendable product which differs from the plurality of articles, the additional product having a leading edge, positioning the additional product adjacent the first face of the formation and positioning the leading edge of the additional product (a) upstream of the leading edge of the first article a distance no greater than the circumference of the mandrel, (b) aligned with the leading edge of the first article, or (c) downstream of the leading edge of the first article, providing an elongated protective element having a leading edge and a trailing edge, positioning the protective element with the leading edge thereof adjacent the second face of the imbricated formation and the trailing edge of the protective element upstream of the trailing edge of the scale flow in the direction of conveyance, winding the scale flow formation together with the additional product and protective element onto the mandrel to form a tubular pack with the additional product against the mandrel outer surface and radially within the articles of the scale flow, and axially removing the tubular pack from the mandrel.

The method according to the invention comprises the association of a complementary or additional product prior to the winding or rolling of the scale formation and namely in the vicinity of its leading end during the winding process and on its side facing the winding mandrel. This additional product is so positioned relative to the scale formation that at least in the vicinity of its leading edge it can be directly wound onto the winding mandrel in such a way that at least its leading edge in the winding process comes to rest in the finished pack on the cavity inner face and can be gripped there for the removal of the additional product.



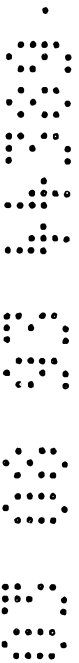
The tubular pack with the protective/holding element and the additional product in accordance with the present invention are described in greater detail hereinafter together with the method and apparatus according to the invention and with reference to the attached drawings, wherein show:

- Fig. 1 an exemplified tubular pack according to the invention.
- Fig. 2 an exemplified scale formation with protective/holding element and additional product prior to winding.
- Fig. 3 an exemplified apparatus for producing packs according to the invention.

Fig. 1 shows a tubular pack P according to the invention comprising a wound or rolled scale formation 1, which can be clearly seen on the end faces of the pack, and an additional or complementary product 2, which is removed from the pack in accordance with the arrow.

The pack is enveloped by a protective/holding element 3, which extends only over the circumferential surface of the pack or over its end faces. The pack has an inner cavity and an inner surface round said cavity. For removing products from the pack the product edges or corners resting on the inner surface of the cavity are gripped or grasped. So that the additional product can effortlessly and easily be removed first, it is necessary for at least part thereof (with the edge) to form at least part of the inner surface of the pack, where gripping can take place. It is also advantageous if the additional product is in no way wrapped in between products of the scale formation. These conditions determine the relative positions of the scale formation and the additional product during the winding process.

Fig. 2 shows these relative positions of the scale formation 1, additional product 2 and protective/holding element 3 immediately prior to the winding process. As a function of the scale formation length the representation can correspond to a real state, but in



the case of a long scale formation the leading end of the latter will already be wound when the protective/holding element is associated with the pack. The arrow W indicates the conveying direction against the winding device and the direction in which the scale formation is to be wound around a winding mandrel.

The additional product 2 is associated with the scale formation 1 on the side 11, which is concave in the roll and faces the winding mandrel during the winding process, whilst the protective/holding element 3 is associated with the opposite side, i.e. the convex side 12 in the roll. So that the leading edge 24 of the additional product in the winding process comes to rest on the winding mandrel, it must not be behind the leading edge 13 of the scale formation 1 in the conveying direction by more than the mandrel circumference  $d$ . This means that it can be either positioned in front of the edge 13, as shown in fig. 2, or at the same position as the edge 13, or behind the edge 13, but by no more than a spacing  $d$  corresponding to the winding mandrel circumference. This means in the drawing that the edge 21 must be to the right of the line 14.



To ensure that the additional product 2 is not wrapped in between printed products of the scale formation 1, its trailing edge in the winding process must not be behind the edge 13 by more than the winding mandrel circumference  $d$ .



The length in the conveying direction of the additional product 2 is not subject to any condition if its leading edge 21 runs in random manner upstream of the leading edge 13 of the scale formation 1. However, as a markedly leading additional product considerably lengthens the winding time, it is appropriate not to make the additional product unduly long or to correspondingly fold the same.



In order that the additional product can be removed from the pack without examination or inspection, it is advantageous for there

to be no product edges, apart from one or more additional product edges, on the inner surface of the pack. In order that this applies, the additional product must be longer than the winding mandrel circumference  $d$  and, as shown in fig. 2, must be positioned as a whole to the right of line 14.

The width of the additional product transversely to the conveying and winding direction is advantageously the same or smaller than the width of the products of the scale formation. Only in this way does the additional product not project from the pack and is correspondingly adequately protected. If the additional product is narrower than the printed products of the scale formation, within the pack it can be moved centrally or against an end face or can be positioned engaging on the latter.

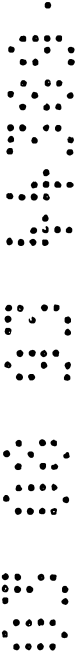


Fig. 3 shows in highly diagrammatic form an exemplified embodiment of the apparatus for performing the method according to the invention. The said apparatus is in accordance with the aforementioned publications of the same applicant, which are here assumed as known, with the exception of a partial device 30 for the controlled supply of the additional products 2. The apparatus has a conveying means 31 for supplying the scale formation and a winding device, whereof in fig. 3 only the winding mandrel 32 is shown. It also e.g. has a supply reel 33 for the material of the protective/holding elements and a corresponding feed and cutting device (not shown). The partial device 30 for the controlled supply of the additional products 2 is advantageously positioned on the same side of the supplied scale formation 1 as the winding mandrel 32. It can be a controllable feeder or scale buffer or something of a similar nature. Such devices correspond to the prior art and need not be described in detail here. The partial device 30 for the supply of the additional products 2 is so coordinated with the supply of the scale formation 1 that each scale formation intended for a pack has an additional product 2 associated with it with the desired position of the leading edge 21.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of producing a tubular pack of articles in a scale flow formation with an additional product in the center of the pack comprising the steps of conveying a  
5 plurality of flat, bendable articles in a scale flow formation in a direction toward a winding device with a mandrel having a central axis and an outer surface with a predetermined circumference and with a first face of the scale flow positioned so as to be toward the mandrel outer  
10 surface when the scale flow formation is wound on the mandrel and a second face positioned to be away from the mandrel when so wound, the formation having a first article with a leading edge and a last article with a trailing edge; providing adjacent the scale flow formation an  
15 additional flat and bendable product which differs from the plurality of articles, the additional product having a leading edge, positioning the additional product adjacent the first face of the formation and positioning the leading edge of the additional product (a) upstream of the leading edge of the first article a distance no greater than the circumference of the mandrel, (b) aligned with the leading  
20 edge of the first article, or (c) downstream of the leading edge of the first article, providing an elongated protective element having a leading edge and a trailing edge, positioning the protective element with the leading edge thereof adjacent the second face of the imbricated formation and the trailing edge of the protective element  
25 upstream of the trailing edge of the scale flow in the direction of conveyance, winding the scale flow formation together with the additional product and protective element  
30 onto the mandrel to form a tubular pack with the additional product against the mandrel outer surface and radially within the articles of the scale flow, and axially removing the tubular pack from the mandrel.



2. A method according to claim 1 and including positioning the trailing edge of the additional product upstream of the leading edge of the first article by a distance less than the mandrel circumference.

5 3. A method according to claim 2 wherein the length in the conveying direction of the additional product is greater than the mandrel circumference.

DATED THIS 7th DAY OF MAY 1996

FERAG AG

By its Patent Attorneys:

GRIFFITH HACK & CO

Fellows Institute of Patent  
Attorneys of Australia

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ABSTRACT

In tubular packs (P) containing a scale formation (1) of bendable, flat articles, particularly printed products and which are enveloped by a protective/holding element (3), according to the method of the invention an additional or complementary product (2) can be positioned in such a way that during the individual removal of the products from the interior of the pack said additional product can be removed first. This is achieved in that the additional product (2) is associated with the scale formation (1) prior to its winding process on its concave side in the roll and in the vicinity of its leading edge in the winding process and is then wound together with the scale formation.



(Fig. 1).

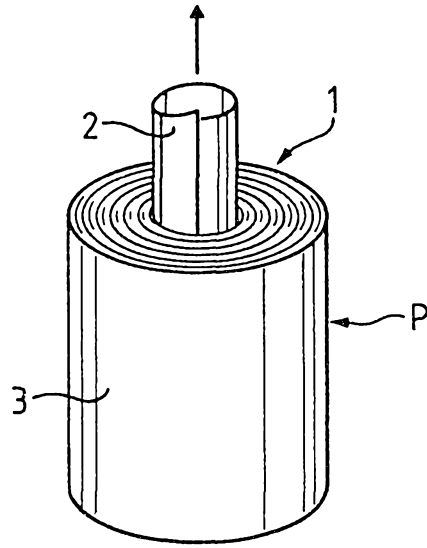


FIG. 1

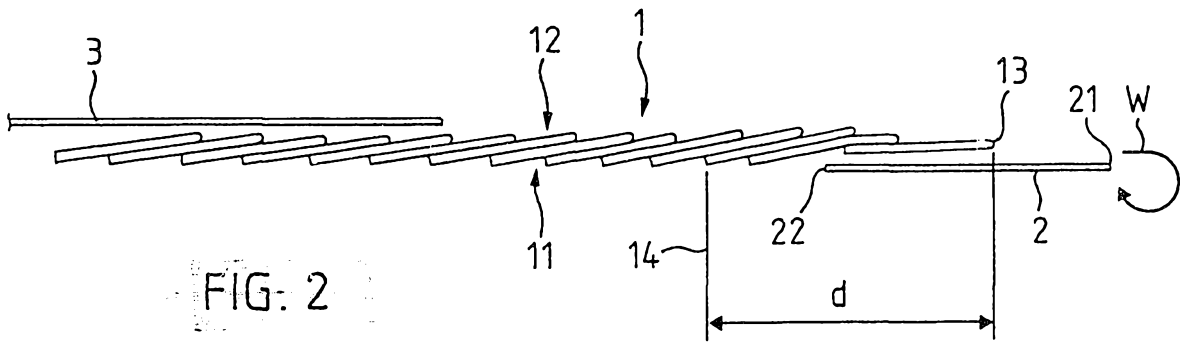
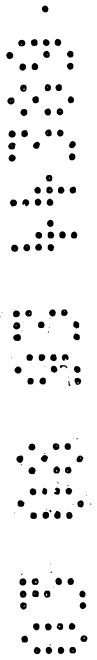


FIG. 2



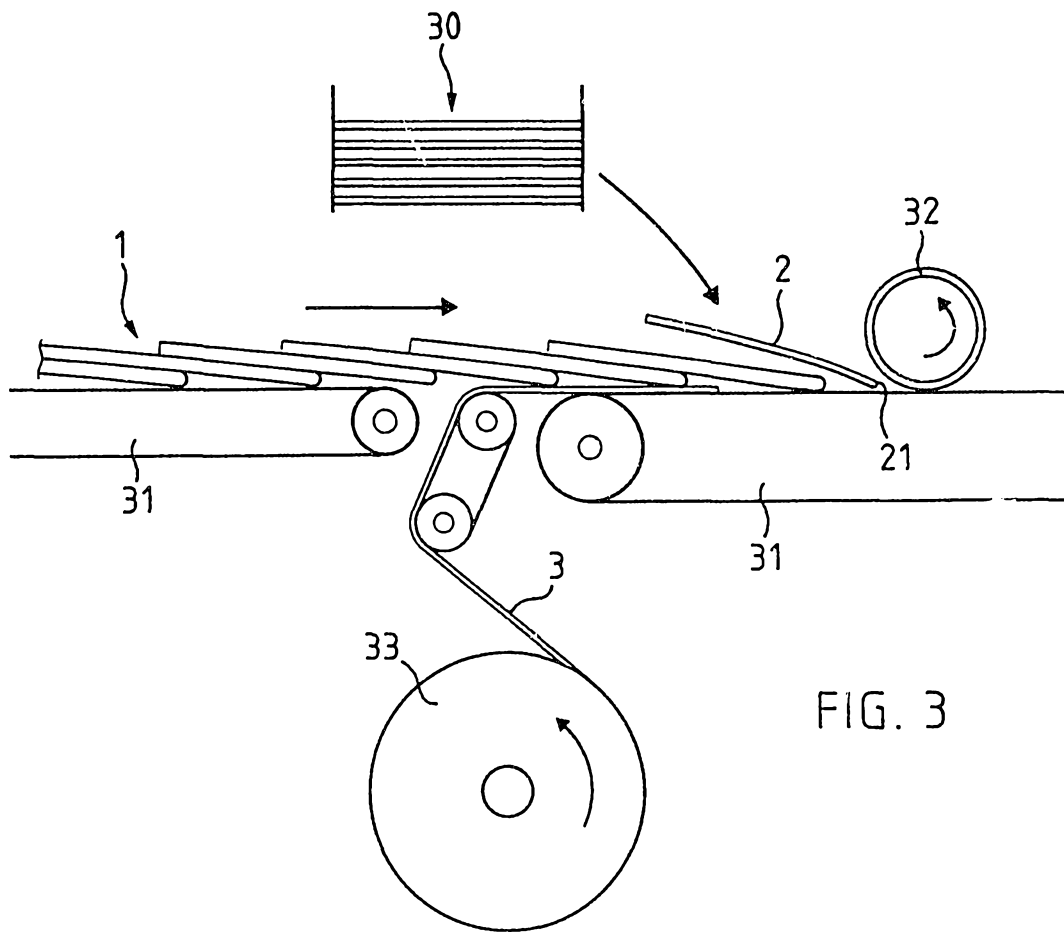


FIG. 3

