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(71) Applicant: Biondi, Vitaliano
Via Togliatti, 38 Quattro Castella
I-42100 Reggio Emilia(IT)

(71) Applicant: Gasparini, Gianfranco
Via S. Vincenzo, 10 Arceto di Scandiano
I-42100 Reggio Emilia(IT)

(71) Applicant: Piazzi, Stefano
Via Ranzani, 13/3
Bologna(IT)

(72) Inventor: Biondi, Vitaliano
Via Togliatti, 38 Quattro Castella
I-42100 Reggio Emilia(IT)

(72) Inventor: Gasparini, Gianfranco
Via S. Vincenzo, 10 Arceto di Scandiano
I-42100 Reggio Emilia(IT)

(72) Inventor: Piazzi, Stefano
Via Ranzani, 13/3
Bologna(IT)

(74) Representative: Bonfreschi, Mario
Bugnion S.p.A. Viale Trento Trieste, 25
I-41100 Modena(IT)

(54) **Improvements in tubular containers for rolled papers and the like.**

(57) The invention relates to a container lid (1), easy to use in the extreme and offering certainty of its non-separation form the container (2) itself when the latter is upturned with the lid (1) facing downward. The lid (1) comprises a lateral border (11) whose inner or outer surface offers insertion to or inserts into the respective outer or inner surface of a container end-section (3a) to be closed by direct contact therewith; and a bottom – or head – (12) joined to the said lateral border and exhibiting at least one section in relief disposed eccentrically upon the inner surface of the bottom or head (12), the said relief designed to make contact with the container contents once the said container is upturned with aforesaid end-section facing downward, whilst the remainder of the head (12) inner surface makes no contact with the said contents.

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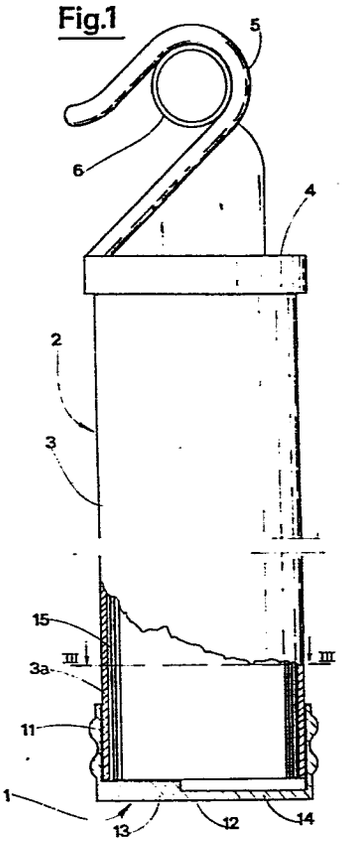
Fig.1



Improvements in tubular containers for rolled papers and the like.

At the present time, conventional means exist for storing rolled sheets of paper -viz. drawings, posters and such like, which consist of tubular containers made up of a hollow cylindrical body enclosed at one end by a permanent base, and at the other extremity by a lid furnished with a lateral border into which the open end-section, or mouth of the container is inserted, a certain degree of tightness existing between the two. Such lids remain attached to their relative container by means of the grip produced between the lid itself and the container surface, this in turn depending upon the pressure which the lateral border of the lid exerts upon the open, end-section of the container.

When the container is upturned —its mouth facing in a downward direction— the said lid does not ensure a completely effective seal and, sooner or later, the contents' own weight causes loosening, and subsequent separation of the lid from the container.

Quite clearly there are other kinds of lids intended

for tubular containers —of a type used for purposes other than storing rolled papers and the like— which can guarantee perfect closure (suffice it to mention the kind which screws onto the container) although, equally clearly, one is dealing with a much costlier and more complex variety of lid of the kind alluded to and, what is more, with types requiring special machining and/or moulding or shaping of the container mouth.

The main object of the invention described herein is that of providing and economical, easy-to-close lid which at the same time is guaranteed not to separate from the container once the latter is upturned, its mouth facing downward.

This and other aims are attained to by the invention, which is characterised by the fact that it conprises: a stopping, or encasing lid comprising a lateral border whose inner or outer surface affords an insert for or inserts into either the outer or inner surface —respectively— of the tubular container end-section to be closed, by direct contact therewith, and a base, or bottom or head, joined to the said lateral border and offering a section in relief positioned eccentrically upon the said head's inner surface, the said relief

designed to make contact with the contents of the container when the latter is upturned with its aforementioned end-section facing downward, the remainder of the head inner surface making no contact with the said contents however.

Further features and advantages of the invention described herein will emerge more clearly from the detailed description which follows, of preferred whilst not exclusive forms of embodiment thereof, illustrated as strictly unlimited examples, with the aid of the accompanying drawings, in which:

fig 1 shows the tubular container to which the invention refers, in part from one side, and in part axial cross-section;

fig 2 shows a side-view of the container lid;

fig 3 shows a transverse cross-section through fig 1 at III-III;

fig 4 shows a second form of embodiment of the container lid, in cross-section as per fig 3;

fig 5 is a perspective drawing of a number of containers appended from bearer means to which the invention refers;

fig 6 shows a full frontal view of means in fig 5.

With reference to the above drawings, 2 denotes the tubular container in its entirety, whilst 1 denotes the

lid thereof. The container 2 comprises: a hollow cylindrical body 3 —obtained in fact by cutting from a length of plastic tubing— enclosed at one extremity by a permanent base 4 glued or otherwise affixed to the body 3.

When utilising containers such as this in general, and when adopting the kind as seen in fig 1 in particular, which hang with their open end-section facing downward, it is important that the lid be such as to ensure against its separating from the actual container by dint of the contents' weighing down thereupon.

The lid to which the invention refers comprises a lateral border 11 which generates cylindrically from base, whose inner surface encompasses the outer surface of the open end-section 3a of the cylindrical body 3, making direct contact therewith and —ideally— offering a certain degree of constrictive force thereto.

To this end, both the lateral border 11 inner surface and the end-section 3a outer surface are cylindrical, and mate all but exactly, in such a way that engagement and separation of lid 1 and container 2 are brought about as the result of a relative movement toward or away along the direction established by the axis of the cylindrical body 3.

The lateral border is united with a head 12, this

perpendicular with respect to the cylindrical body 3 axis and offering a section in relief positioned eccentrically upon the head inner surface. More exactly, the head 12 consists of two portions 13 and 14, portion 13 being of greater thickness than portion 14, the visible increase in thickness protruding toward the container interior; in other words, the inner surface of the head 12 —that is, the surface of head 12 facing into the container itself— exhibits a "step" between portions 13 and 14. Moreover, portions 13 and 14 are of surface area in the form of segments-to-a-circle, the area of portion 13 being less than half of the entire head inner surface area. When the container 2 is upturned with its lid facing downward (as per fig 1) the said relief, or portion 13 —and in fact only this portion— is brought into contact with the rolled sheets of paper 15 deposited inside the container, whilst the remaining portion 14 lies at a slight distance from the papers, making no contact therewith.

The contact area between portion 13 and the rolled papers 15 corresponds in essence to a strip of circumferential arc generating for less than 180^{o} whose centre of gravity is sure not to coincide with the geometrical centre of head 12; in any event,whatever the shape and number of rolled papers or suchlike

contents, the centre of gravity established through contact between these and the inner surface of the head 12 will undoubtedly lie at a given distance from the geometrical centre of the latter.

It will be seen from this that the contents exert an eccentrically-applied force upon the head 12, producing a would-be angular reaction in the lid causing it to rotate around a horizontal axis: this produces a marked increase in the grip existing between lid and end-section 3a, the upshot being that the weight of the contents of itself is not able to dislodge the lid from the container. This holds good even for contents of somewhat greater weight,in that the said angular force increases with the increased weight of the contents. Clearly, the 'non-slip' effect thus produced and described will be enhanced by the preparation of those surfaces of lid and container making reciprocal contact in such a way as to generate a certain degree of friction.

In a second form of embodiment of the invention, the lid as illustrated in fig 4 shows portion 13 with a surface area in the shape of a sector-to-a-circle disposed concentrically with respect to the centre of head 12 and with the sector-portion nearest the head-centre removed. This ensures that the centre of gravity established by contact between the rolled papers 15 and portion 13

should lie at the greatest possible distance from the geometrical centre of head 12.

A further form of embodiment, not illustrated in the drawings,provides for the lateral border's 11 insertion within said end-section 3a, the contact area in this case becoming that between the outer surface of the lid border and the internal surface of end-section 3a.

In of its possible embodiments, the invention envisages a hook 5 affixed to the base 4 of the container, affording the possibility of the latter's being appended from appropriate means as illustrated in figs 5 & 6.

The hooks serve as grappling elements which enable the tubular containers 1 to hang vertically from means of support consisting basically of horizontal, parallel rods 7 affixed to the walls or to the ceiling and positioned at a given distance from the ground.

In more detail,and with particular reference to the embodiment as set forth in the drawings, the said means of support comprise two horizontal and parallel rods 7 borne up by brackets 8 provided with sockets 9 into which the rods 7 are firmly inserted.

The brackets 8 are provided with plates for their fixture either to the walls or to the ceiling in such a way as to be inclined within a vertical plane and with respect to the plates themselves —hence to the

walls or ceiling— at an angle of 45°: in this way, the two rods 7 will be positioned at the same differing distances from ground level, whether said brackets are affixed to the walls or to the ceiling.

The tubular containers as thus hooked onto the rods 7 and remain suspended vertically with lid 1 fitted to the lower container extremity: the rods 7 are located at differing heights from the ground in such a way that, viewed from a frontal standpoint as in fig 6,not only those containers hung from the forward-most rod are visible, but also those hung from the rear-most of the rods 7.

The invention described herein thus sets forth means for filing which are functional and uncomplicated in the extreme; what is more, they occupy little space in that they are arranged along the walls or ceiling; all the containers may be seen quite plainly and therefore can be easily identified; the papers are protected from dust and from the light thanks to their being enclosed in suitable containers; finally, the containers themselves may be hung up speedily and without any difficulty whatsoever.

Furthermore,the filing means, or system, supplied by the invention thus described is simple and economical constructively speaking; the permanent bases 4 with

their relative hooks 5,the lids 1, as well as the brackets 8,sockets 9, and plates 10 can all be shaped from moulded plastic material, whilst the cylindrical bodies 2 and rods 7 may be fashioned from commercially available tube.

The invention described herein may be subject to any number of modifications of a practical nature, applied to the constructional embodiment thereof, without by any means straying from within the bounds of protection afforded to the fundamental concept as claimed below.

Claims

1) A tubular container for rolled papers and the like, characterised by the fact that it comprises: a lid incorporating a lateral border whose inner or outer surface offers insertion to or inserts into theouter or inner surface respectively of the end-section of the tubular container to be closed, by direct contact therewith; and a bottom, or head, joined to said lateral border and exhibiting at least one section in relief disposed eccentrically upon the head inner surface, the said relief serving to make contact with the container contents once said container is upturned with said end-section facing downward, the remainder of the head inner surface making no contact with such contents however.

2) Container according to claim 1 characterised by the fact that the said bottom or head offers a portion (13) occupying a surface area less than half of the total surface area of the head itself and being of greater thickness than the remaining portion (14) of said head, the increased said thickness protruding toward the container interior and defining the aforesaid section in relief.

3) Container according to claim 2 characterised by the

fact that the said portion (13) of increased thickness occupies a surface area of shape such that contact between same and papers contained within the container establishes a centre of gravity certain to lie at a distance from the geometrical centre of said bottom or head.

4) Container according to claim 3 of a type in which the lid head is circular, characterised by the fact that the said portion (13) of increased thickness occupies a surface in the shape of segment-to-a-circle whose area is less than half of the total head inner surface area.

5) Container according to claim 3 characterised by the fact that the said portion (13) of increased thickness occupies a surface in the shape of sector-to-a-circle, disposed concentrically to the head centre and with a sector portion nearest the latter absent therefrom.

6) Container according to claim 1 characterised by the fact that it comprises a hook element affixed to its permanent base (4), designed to hang from apposite means of support suspended at a given distance from the ground which accommodate a number of like tubular containers appended vertically therefrom.

7) Container according to claim 6 characterised by the fact that the said hook elements consist of crooks

affixed to said permanent container-bases (4).

8) Container according to claim 6 characterised by the fact that the said means of support consist of horizontal parallel rods affixed either to the walls or to the ceiling at a given distance from the ground.

9) Container according to claim 8 characterised by the fact that the said means of support comprise two or more horizontal and parallel rods borne up by brackets attached to wall- or ceiling-fixture plates, said brackets inclined 45^{o} with respect to said plates and within a perpendicular plane.

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Fig.4

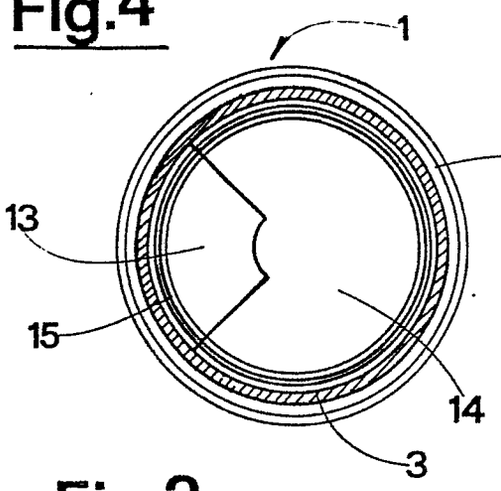


Fig.1

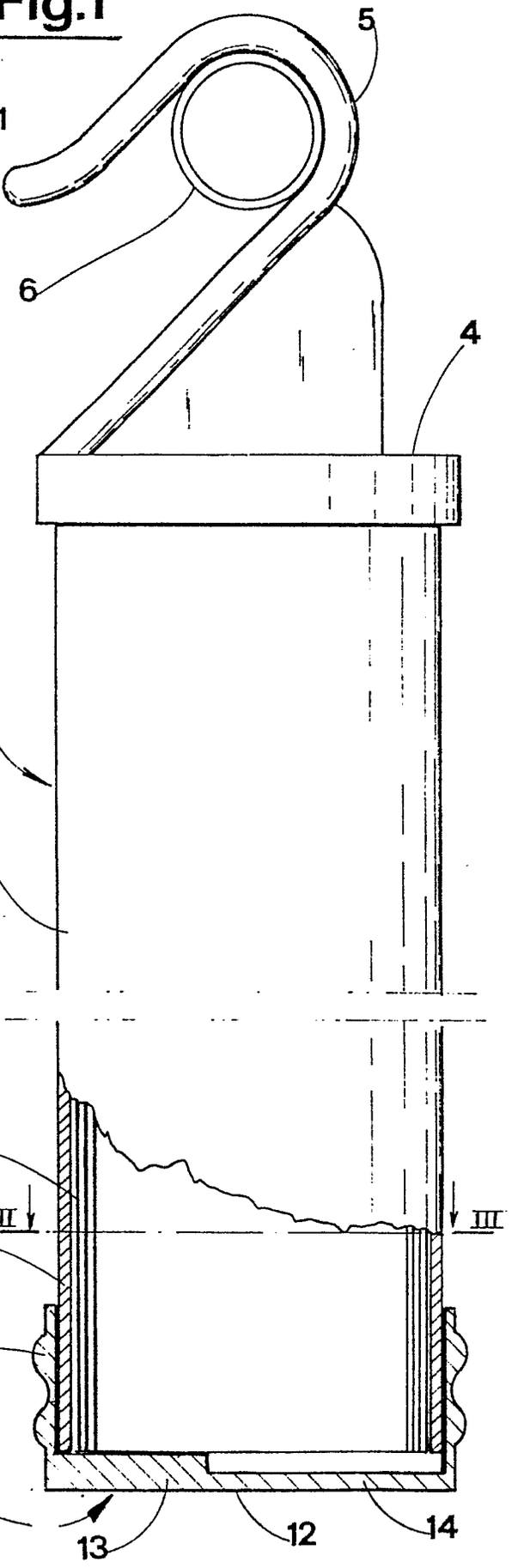
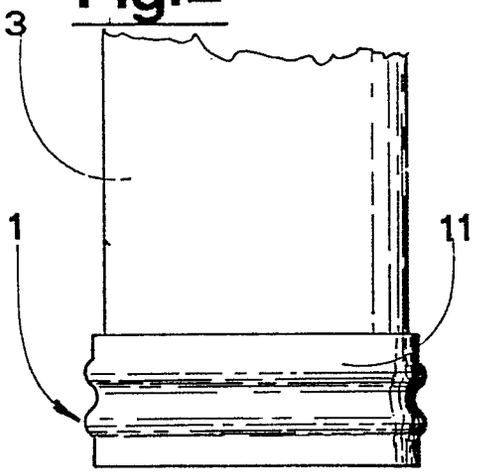


Fig.2



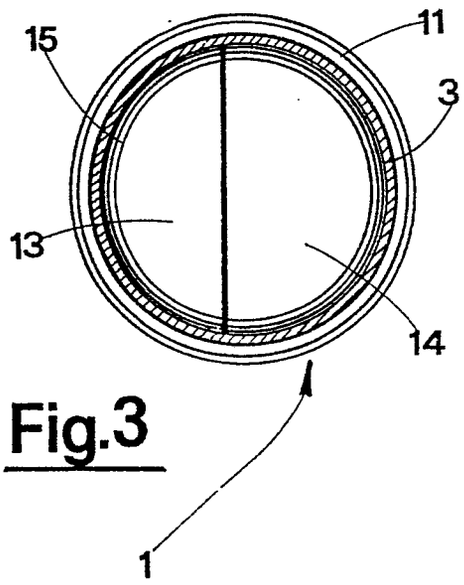


Fig.3

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Fig. 5

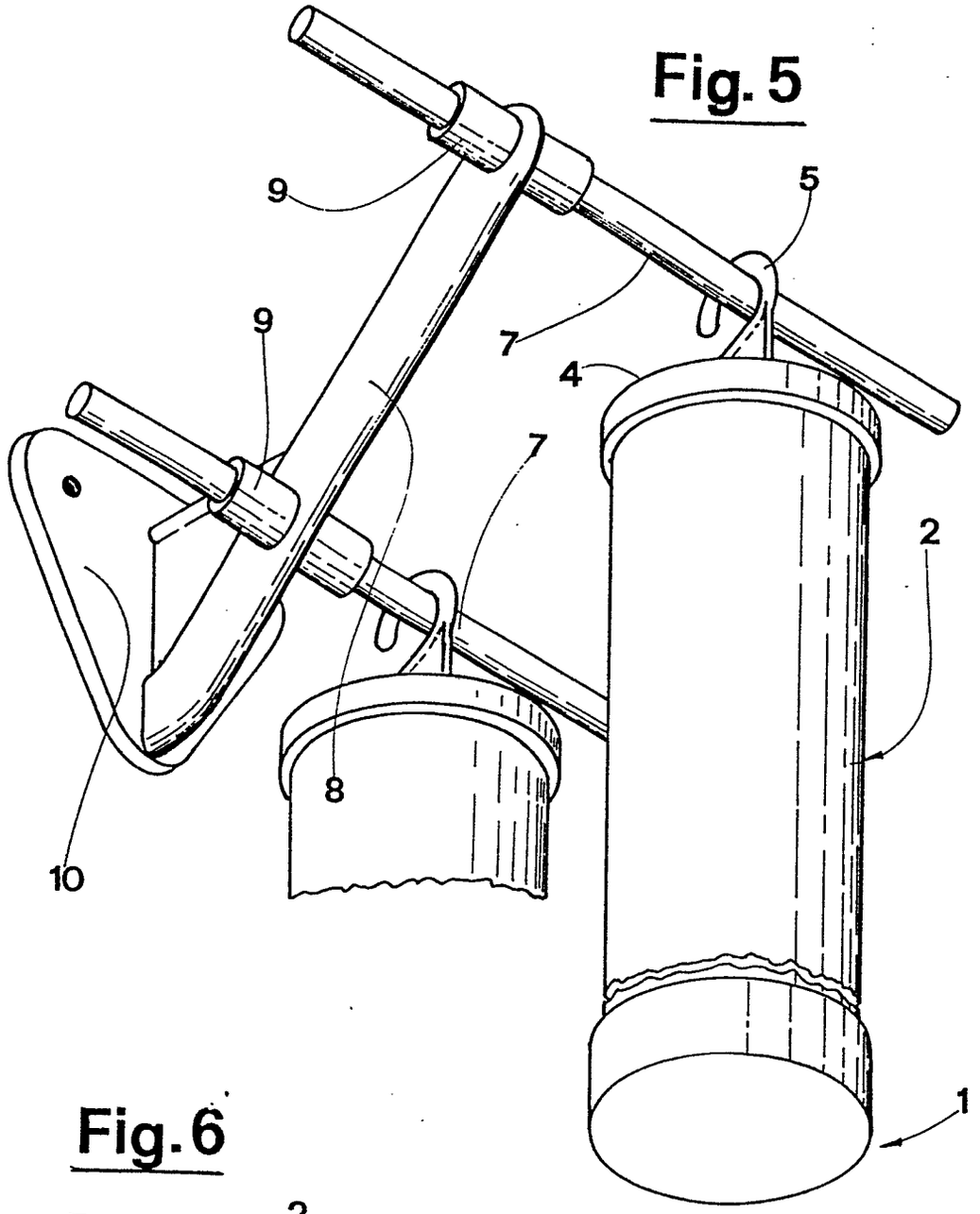
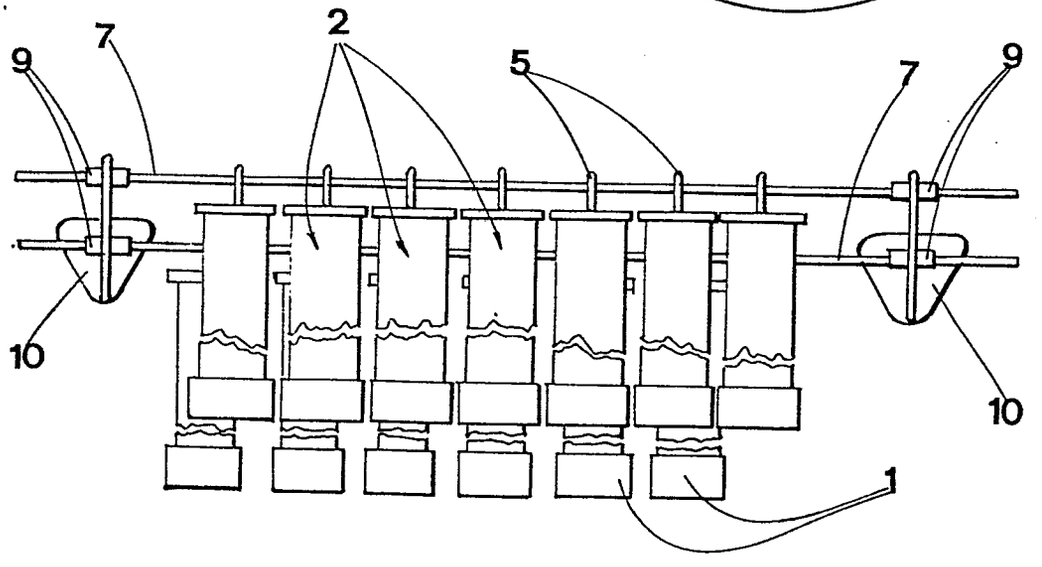


Fig. 6



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EUROPEAN SEARCH REPORT

Application Number
0085281
EP 82830023.6

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
A	US - A - 3 558 036 (DE VOE) * Fig. 1, 2, 8 *	1
A	DE - A - 2 200 313 (P.V.B.A., THOVADEC) * Fig. 1, 2 *	1,2
A	US - A - 2 412 004 (O'BRIEN) * Fig. 1, 3 *	1
A	AT - B - 75 849 (FA AKTIENGESELLSCHAFT F. CARTONNAGENINDUSTRIE) * Fig. *	1
A	LUEGER "Lexikon der Technik, Maschinenbau Grundlagen" 1971 ROWOHLT TASCHENBUCHVERLAG Hamburg * Page 419, lines 27-36; fig. 4 *	1

CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)

B 65 D 8/04
B 65 D 3/10
B 65 D 3/04
B 65 D 25/22

TECHNICAL FIELDS SEARCHED (Int.Cl. 3)

B 65 D 3/00
B 65 D 5/00
B 65 D 8/00
B 65 D 25/00
B 65 D 41/00
B 65 D 43/00
F 16 B 2/00

CATEGORY OF CITED DOCUMENTS

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&: member of the same patent family, corresponding document

X The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	30-09-1982	CZUBA

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