





 **EUROPEAN PATENT APPLICATION**


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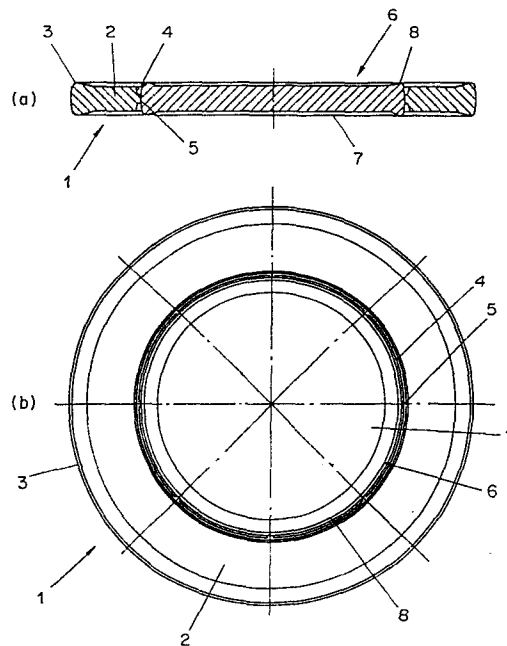
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 **Bimetallic composite coin blank for coins, medals and the like.**

 A coin blank for the coining of coins, medals and like products, obtained by forced joining of two metal parts, each of them being of different metal or metal alloy, one forming the internal central part and the other the external perimetrical part, said forced joining of said two component parts being carried out, in a definitive and inseparable way, preferably upon the minting operation.



ISTITUTO POLIGRAFICO E ZECCA DELLO STATO

Bimetallic composite coin blank
for coins, medals and the like.

Specification

5 This invention refers to a coin blank formed by two metal parts, one external and the other internal, made integral one with the other, apt in a particular congenial way to be used in the coining of coins, medals and the like.

10 The metal coins, medals and the like are generally obtained imprinting, through coining, representations, signs and pre-established symbols on metal disks, so-called coin blanks, of various thickness and various diameter, and it should be noticed, however, that such denomination is also intended to mean, for reasons of
15 ease of description, any piece which is to be minted, having a shape which is different from the circular one.

20 With particular reference to metal coins, the starting coin blanks are normally formed by a single alloy of two or more metals or even by several layers of different metal alloys, obtained through plating.

25 Such coin blanks, through generally employed, are not free from inconveniences deriving from limitations of versatility of performance and functionality since they are mainly bound to the weight and physical and mechanical characteristics of the used material, especially as far as

the monometallic coin blanks are concerned.

Through the bimetallic coin blanks according to the invention the inconveniences of the similar products of the prior art are overcome, or at least reduced to a minimum, thus obtaining among others the following combination of advantages:

possibility of changing the weight of the finished product without varying the dimensions thereof;

possibility of changing the electric and magnetic characteristics of the finished product by effect of the variation of the dimensions and of the nature of the materials forming the two component parts;

possibility of variation of the costs with relation to the quantity and to the type of the material which forms each of the component parts;

greater assurance against falsifications since the production of bimetallic coin blanks according to the invention through improvised means would be too expensive and would absorb the profits on which generally coin forgers rely;

greater assurance against frauds in automatic distributing machines, due to the particular physical properties of the bimetallic coin blanks according to the invention being not easily reproduceable in conventional coin blanks;

possibility of creating two-coloured coins.

It is therefore the object of this invention to provide a bimetallic composite coin blank for coins, medals and the like, presenting aspects of functionality and practicality which are highly above those of similar known products.

The invention will be illustrated more in detail further on by the description of a preferred embodiment thereof, concerning a coin blank for metal coins, quoted as an exemplifying and not limiting form, with reference to the enclosed drawings, wherein:

figures 1a,b,c,d are respectively views in cross-section and in plan, of the external perimetrical part of a bimetallic coin blank according to the invention and of a detail thereof in an enlarged scale, before the forced joining with the internal central part of figure 2;

figures 2a,b are respectively views in cross-section and in plan, of the central internal part of the bimetallic coin blank according to the invention before the forced joining with the external part of figure 1;

figures 3a, b are respectively views in cross-section and in plan, of the external part and internal part of figures 1 and 2, respectively, of the bimetallic coin blank according to the invention in the assembled condition and before the forced joining;

figure 4 is a view respectively in cross-section of the external part of figure 1 and in elevation of the internal part of figure 2 of the bimetallic coin blank according to the invention in the assembled and pre-compressed condition, these being shown as positioned in a schematically shown coin press; and

figure 5 is a cross-sectional view of the bimetallic coin blank according to the invention after the forced joining of the external and internal parts of figure 1 and respectively 2 by the action of mintage of the coin press of figure 4.

With reference to figure 1 the external perimetrical part of the bimetallic coin blank according to the invention to be used for the mintage of coins, is indicated generically at 1.

The external perimetrical part 1 is formed by a circular crown 2 of a metal alloy or adequate metal, generally showing a slight swell of the outer perimetrical edge, that is a "hemming" 3, while the internal perimetrical edge, as best shown in detail in figures 1b and 1c, has the form of a tapering 4 such to obtain a circumferential edge considerably reduced, from the face of which, towards the inside, a certain number of small teeth 5 protrude integrally in a radial direction.

Figure 2 shows the internal central part, indicated generally in 6, of the bimetallic coin blank in question, herein formed by a disk 7 in metal alloy or metal different from that of the external perimetrical part 1,

said disk showing also a hemming 8.

The diameter of the disk 7 is essentially the same as the diameter of the circumference passing by the free ends of the small teeth 5 protruding from the reduced edge portion of the internal perimeter of the circular crown 2.

For the formation of the bimetallic coin blank according to the invention the component elements described above are placed in a conventional mechanical press with the internal central part 6 adapted in the circular opening of the external perimetrical part 1 (see figure 3) and they are subjected to a slight compression for carrying out an interference joining of the said parts, merely to prevent detachment of one from the other during handling for the following operations.

The bimetallic coin blank so precompressed is then positioned in a conventional coin press, as shown in figure 4, in which it undergoes the operation of minting which determines the final joining in an inseparable way of the internal and external components. In fact, during the above mentioned operation, due to the strong pressure exerted by the coining cones on the two faces of the bimetallic coin blank, the components thereof described above are subjected to an action of squashing during which, as can be observed in figure 5, the central disk 7 expands in a larger amount with respect to the external circular crown 2, contained in the ferrule of the press, filling by plastic sliding the free spaces of the tapering 4 of the inside perimetrical edge of the circular crown 2 while the small teeth 5 penetrate in the side surface of the

disk 7 preventing any whatsoever relative rotation movement between the two components.

The resulting forced joining is therefore such that it does not leave any degree of freedom of reciprocal movement of the parts which form the bimetallic coin blank according to the invention.

Although the example of embodiment according to the present invention described above has been referred to a coin blank for coining metal coins wherein both the internal central part and the perimetrical external part are of a circular form, it is possible, as already stated, to vary at will for other applications, for example in the production of medals and the like, the form of one or both the components as long as obviously the outside contour of the central internal part corresponds to the inside contour of the perimetrical external part.

Therefore this invention is not limited to the example of embodiment described but comprises any variation of execution thereof.

Claims

1. Bimetallic coin blank for coins, medals and the like,
characterised by the fact that it comprises: an in-
5 teral part formed by a first metal or metal alloy;
an external part formed by a second metal or metal
alloy, showing a central opening, apt to seat said
internal part and the contour of which is however
10 coincident with the contour of said internal part;
means for an integral joining of said internal part
with said external part; and fixing means for avoiding
a relative rotation of said internal and external parts.

2. The bimetallic coin blank according to claim 1, wherein
15 said internal part and said external part have a hem-
ming of the respective outside perimetrical edge.

3. The bimetallic coin blank according to claims 1 and 2,
20 wherein said means for an integral joining of said
external part with said internal part are formed by a
tapering of the internal edge of said external part
such to allow a plastic sliding of the metal or metal
alloy of said internal part in the free spaces at
25 said internal tapered edge of said external part, due
to a squashing operation of said internal and external
parts.

4. The bimetallic coin blank according to claim 3, where-
30 in said means for avoiding a relative rotation of said
internal and external parts are formed by a plurality
of projections integral with the surface facing
towards the inside of the edge of reduced thickness

resulting from said tapering of the internal edge of said external part.

5 5. The bimetallic coin blank according to claim 3,
wherein said operation of squashing of said internal
and external parts in order to achieve the integral
joining thereof, is performed at the time of the
operation of coining of said bimetallic coin blank
in a coin press.

10

6. Method for producing coins, medals and the like by
the use of the bimetallic coin blank according to
claim 1, comprising the steps of: placing said coin
blank in a mechanical press and herein subjecting it
15 to a light compression to prevent detachment of the
internal part of the coin blank from the external part
thereof during handling for the following step; and
positioning the so precompressed coin blank in a coin
press and herein carrying out the minting operation,
20 by which said means for the integral joining and said
fixing means carry out through squashing a forced
inseparable joining of said internal and external parts
which does not leave any degree of freedom of reciprocal
movement thereof.

25

7. The bimetallic coin blank for coins, medals and the
like, substantially as hereinbefore described with
reference to the enclosed drawings.

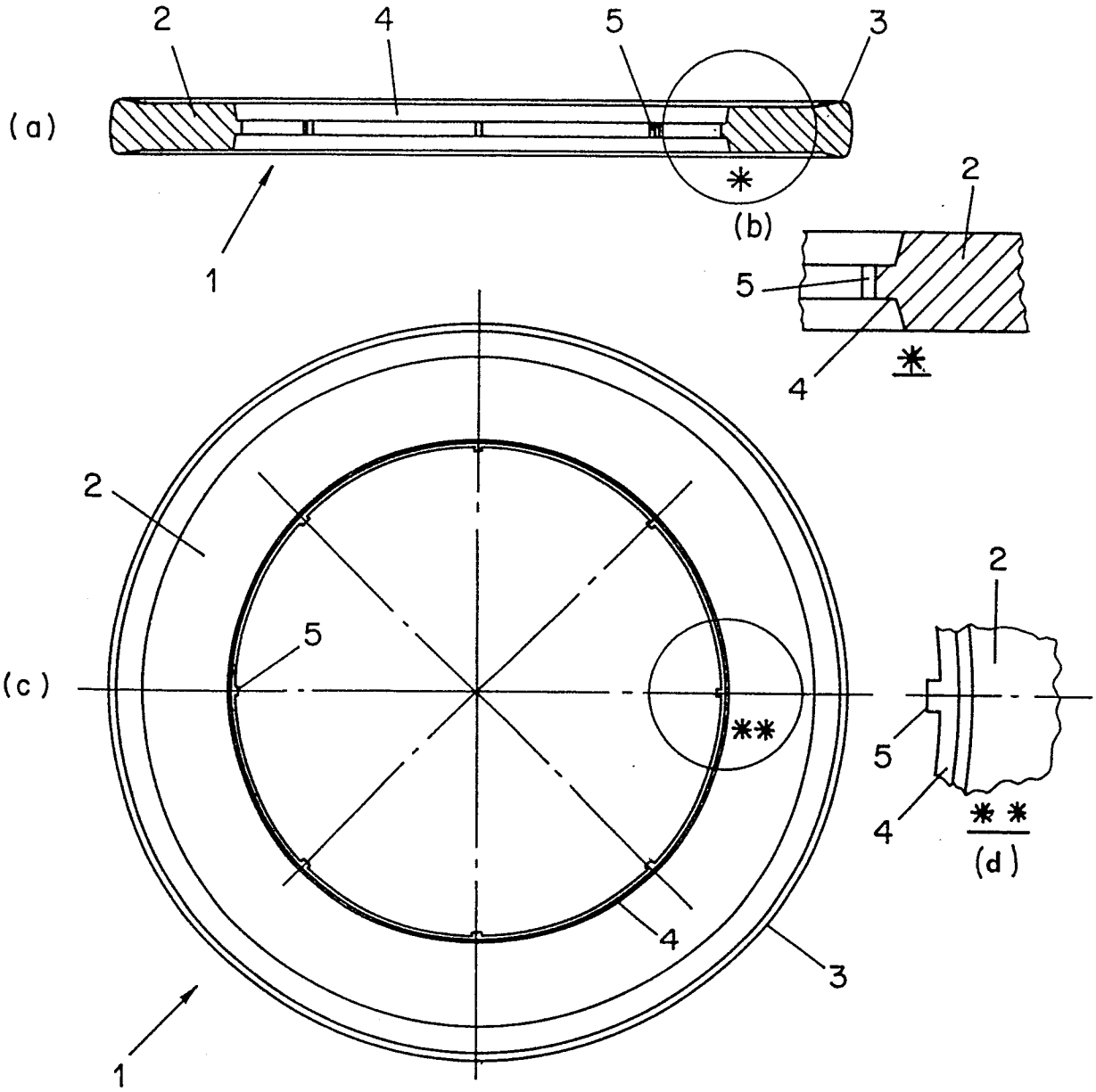


FIG.1

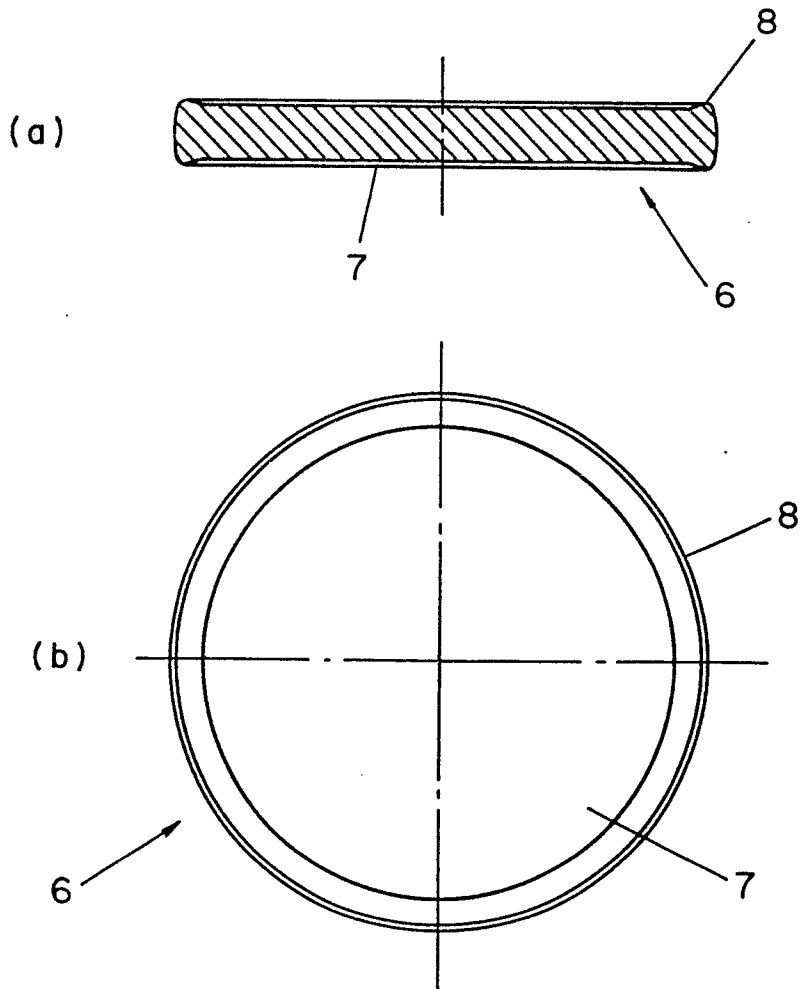
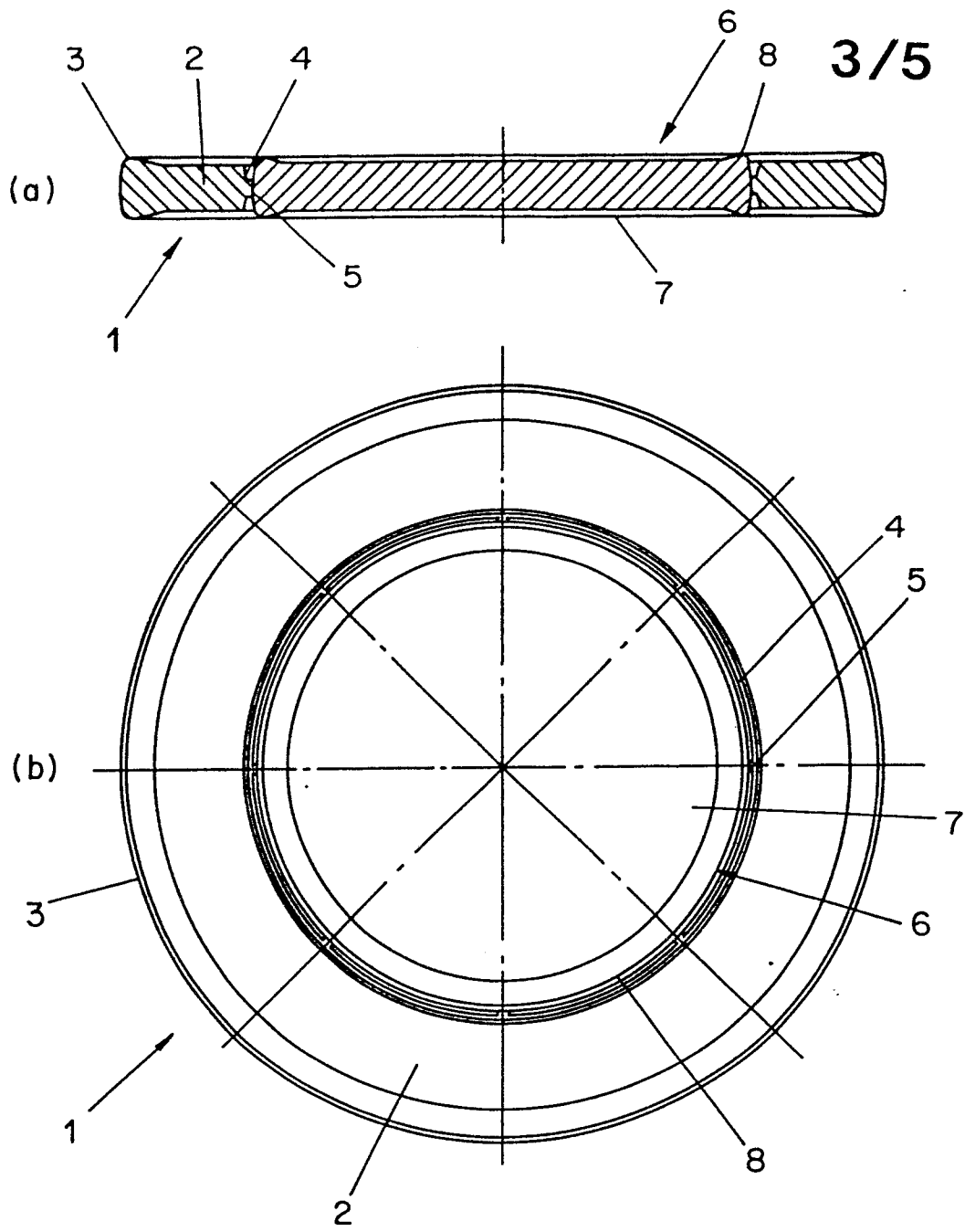


FIG.2



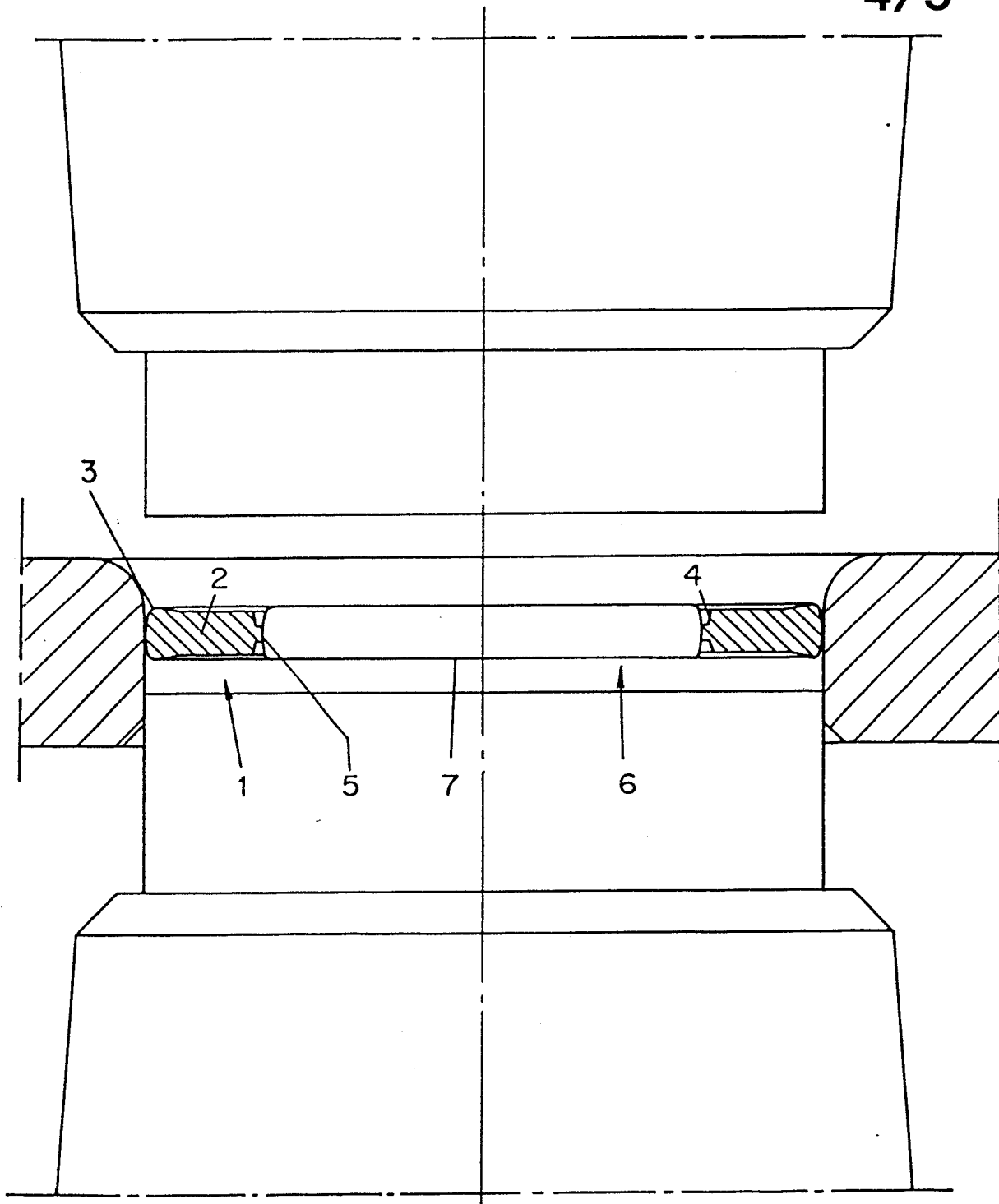


FIG. 4

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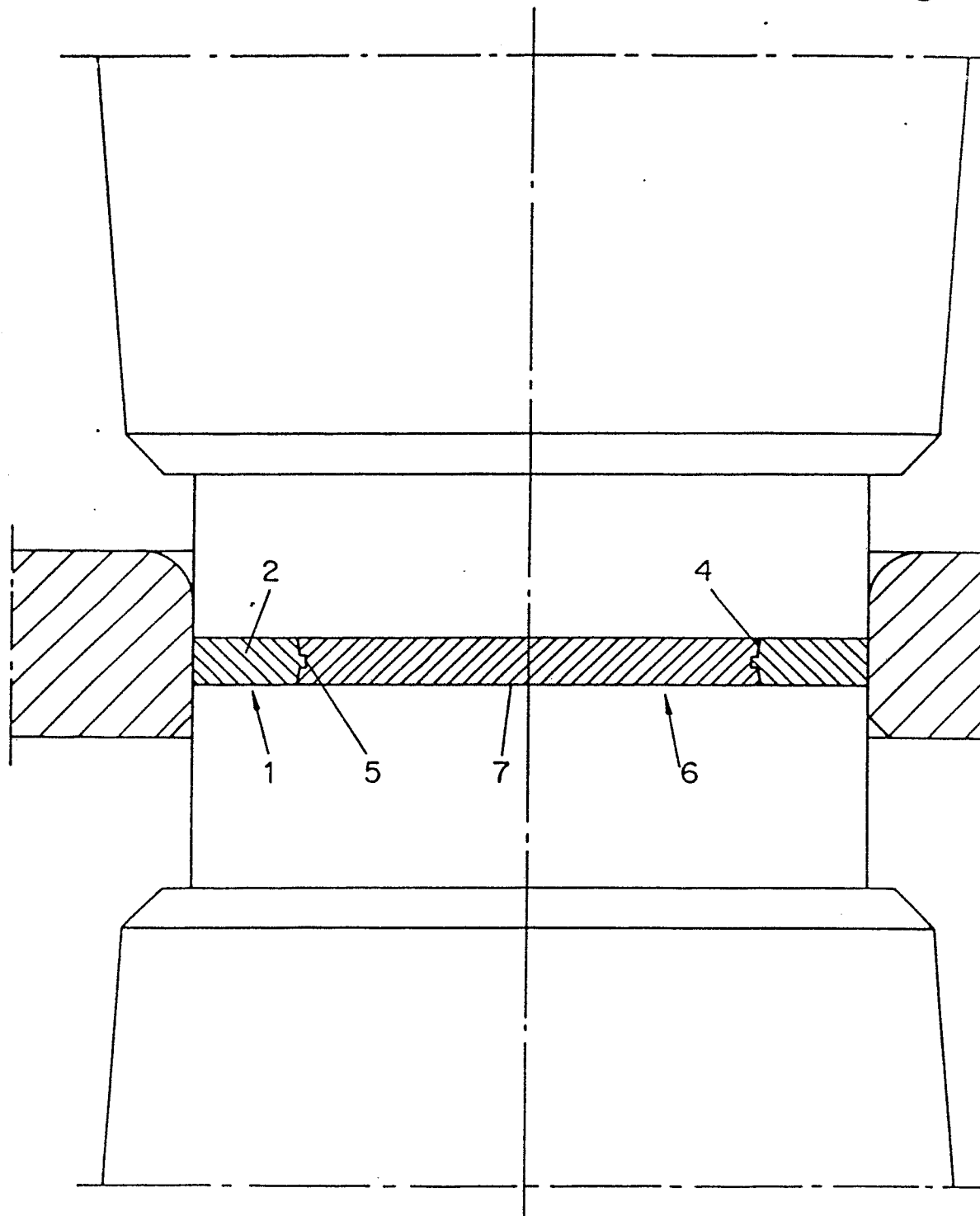


FIG. 5



European Patent
Office

EUROPEAN SEARCH REPORT

0080437

Application number

EP 82 83 0225

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Y	<p>--- US-A-3 499 739 (THE FRANKLIN MINT INC.) *Column 1, lines 59-63; column 2, lines 3-6,64-71; claim 1*</p>	1,5,7	<p>A 44 C 21/00 A 44 C 3/00 G 07 F 1/06</p>
Y	<p>--- GB-A- 413 829 (THE RENOLD & COVENTRY CHAIN COMPANY LIMITED) *Claims; figures*</p>	1,3,4	
Y	<p>--- US-A-2 098 892 (C.SINTZ) *Page 1, column 1, line 55; column 2, entirely; page 2, column 1, lines 1-15; figures*</p>	1,3,4	
Y	<p>--- FR-A-2 101 576 (ROY E.ROTH COMPANY) *Page 2, lines 5-34; figures*</p>	1,3,4	
A	<p>--- GB-A-2 019 195 (R.KANZEN)</p>		
A	<p>--- GB-A-1 483 700 (TURNER & SOMERS LTD)</p>		<p>A 44 C B 23 P B 21 K G 07 F</p>
A	<p>--- BE-A- 865 897 (J.BEYENS)</p> <p>-----</p>		
The present search report has been drawn up for all claims			<p>TECHNICAL FIELDS SEARCHED (Int. Cl. 3)</p>
Place of search THE HAGUE		Date of completion of the search 02-03-1983	Examiner GARNIER F.M.A.C.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p>		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>	

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