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- (56) Prior Art Documents
WO 95/21106
AU 52444/90
US 3687281
- (57) Claim

1 In combination, a paperboard member and a plurality of cans each of which has a top rim, said paperboard member having a plurality of apertures, each of which has a continuous, unbroken periphery which has a shape corresponding to that of the associated top rim and which is dimensioned so as to be marginally smaller than the widest dimensions of the top rim of the can wherein each top rim and each associated aperture are pushed relative to each other so that the rim passes through the aperture which engages in unbroken fashion below the rim to inhibit withdrawal of the can, the paperboard member having two oppositely disposed side walls hingedly attached to the paperboard member, the side walls being adapted to fold up and over the tops of the cans and to be secured to each other.

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A paperboard member having a top rim and an associated aperture in which the top rim is adapted to be received in the aperture in a manner which permits the top rim to be inserted into the aperture without the top rim being damaged or deformed.

the associated top rim and which is dimensioned so as to be marginally smaller than the widest dimensions of the top rim of the can wherein each top rim and each associated aperture are pushed relative to each other so that the rim passes through the aperture which engages in unbroken fashion below the rim to inhibit withdrawal of the can, the paperboard member having two oppositely disposed side walls hingedly attached to the paperboard member, the side walls being adapted to fold up and over the tops of the cans and to be secured to each other.

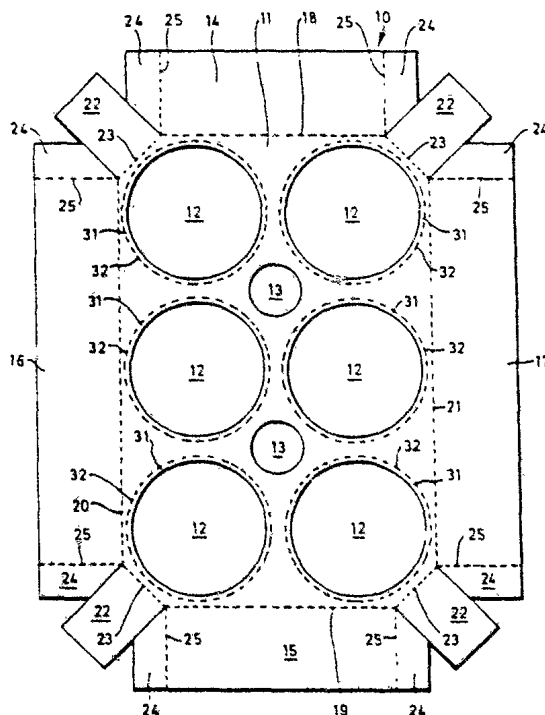


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/GB93/01695 (22) International Filing Date: 10 August 1993 (10.08.93) (30) Priority data: 9217271.7 14 August 1992 (14.08.92) GB (71) Applicant (for all designated States except US): RIVER- WOOD INTERNATIONAL LIMITED [GB/GB]; Fil- wood Road, Fishponds, Bristol BS16 3SB (GB). (72) Inventor; and (75) Inventor/Applicant (for US only) : NEGELEN, Emanuel [DE/DE]; Jeichenweg 14, D-54338 Schweich (DE). (74) Agent: MARLES, Alan, David; Stevens, Hewlett & Per- kins, 1 St. Augustine's Place, Bristol BS1 4UD (GB).		(81) Designated States: AT, AU, BR, CA, CH, DE, DK, LS, FI, GB, JP, KR, LU, NL, NO, NZ, PT, SE, U.S. European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>

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(54) Title: HOLDING ARRANGEMENT FOR CANS



(57) Abstract

There is provided a paperboard blank (10) having a top panel (11) provided with circular apertures (12), each having a diameter just less than the maximum diameter of a can rim. The rim can be pushed through the aperture (12) to retain the can relative to the blank (10). Side walls (14, 15, 16, 17) fold down the sides of the cans and are held by gluing panels (22, 24).

Holding Arrangement For Cans

This invention relates to arrangements for holding a plurality of cans.

Multipacks of cans are well known for drinks and foodstuffs. Cans of drinks, and indeed some
5 foods, are often sold in multipacks utilising a plastic ring having a number of apertures for receiving a corresponding number of cans. This number is often four or six. It is, however, desirable to cease using plastic in such multipacks.

10 According to the present invention there is provided an arrangement for holding a plurality of cans each of which has a top rim, said arrangement comprising a paperboard member having a plurality of apertures, each aperture being dimensioned so as to be
15 marginally smaller than the widest dimensions of the top rim of a can to be held wherein each top rim and each associated aperture are pushed relative to each other so that the rim passes through the aperture which engages below the rim to prevent withdrawal of
20 the can.

Preferably the apertures have their marginal portion upturned prior to coupling with the can. This upturning may be a process performed by the packing machinery itself or the process may be performed when
25 the packing blank is originally stamped.

In preferred arrangements the paperboard member has side walls provided around the apertures which side walls are attached to the paperboard member along fold lines whereby in use the side walls are
30 folded down so as to engage the cans and are secured in the folded down positions. This results in space for printing. The side walls may be secured with glue or by interlocking formations formed integrally with the side walls. This securing may take place before
35 or after attachment to the cans.

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In most situations the apertures are substantially circular. Conveniently the apertures are formed in generally rectangular arrays such as 2 X 2 or 2 X 3 or 2 X 4 or even 1 X 2, 1 X 3, 1 X 4 or
5 any other suitable configurations. Also finger gripping holes may be provided in the central space between each set of four apertures.

In another arrangement two oppositely extending side walls are hingedly attached to the
10 paperboard member, the side walls being adapted to fold over the tops of the cans and secured to each other with, for example, glue.

Embodiments of the invention will now be described in more detail. The description makes
15 reference to the accompanying diagrammatic drawings in which:

Figure 1 is a plan view of a blank for a holding arrangement according to the present invention.

20 Figure 2 is a partial plan view of a further blank according to the present invention.

Figure 3 is a part sectional side view through the figure 2 arrangement in use.

Figure 4 is a partial view of a still further
25 blank according to the present invention.

Figure 5 is a part sectional side view through the figure 4 arrangement in use.

In figure 1 there is shown a paperboard blank
10 which has a top panel 11 in which are stamped
30 apertures 12. The apertures 12 are circular and each has a diameter which is marginally less than the maximum diameter of the top rim of a can (not shown).

The marginal portion 31 surrounding each aperture 12 is upturned slightly along line 32 such
35 that the marginal portions 31 are raised out of the

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general plane of the top panel 11. This upturn may be achieved by cold or hot forming of the blank. In some applications the can rims may require large marginal portions to be upturned and it may be preferable in such cases to use heat in the forming process. In the 5 embodiments shown six apertures 12 are provided in a 2 x 3 rectangular array. Finger holes 13 are also provided, one at the centre of each 2 x 2 sub-array of apertures 12.

10 Side panels 14, 15, front and rear panels 16, 17 are hingedly connected to the top panel 11 along fold lines 18, 19, 20, 21. Corner panels 22 are also hingedly connected to the top panel 11 along fold lines 23. Each panel 14, 15, 16, 17 is also formed 15 with corner portions 24 at each end, which corner portions 24 are hingedly connected along fold lines 25.

In use the blank 10 will be stamped from a sheet of paperboard of suitable thickness. Also the 20 fold lines are formed by scoring, perforating or any other known means. The blanks 10 can then be transported to the actual packing line.

Using the figure 1 blank, a set of six cans will be arranged and the blank 10 will be positioned 25 directly above. The blank will then be pressed over the can rims which engage in their respective apertures 12. Some elastic deformation of the marginal portions 31 surrounding the apertures occurs as the blank is pressed over the rims of the cans, the 30 upturns of the marginal portions 31 providing a lead-in for the cans and assisting the accurate location of the blank on the cans. The marginal portions then snap into position below the rims, tightly engaging the cans just below the rims. The side, front and 35 rear panels 14-17 are then folded down and the corner

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portions 24 are bent around the corner cans. Adhesive is applied to the underside of the corner panels 22 which are then folded down so as to adhere securely to the corner portions 24.

5 The result is a secure multipack of cans which resists removal of the cans.

 When the blank 10 is pressed over the rims the marginal portions 31 surrounding the apertures 12 remain upturned slightly after the marginal portions
10 have snapped below the can rims. It will be appreciated that such upturned marginal portions 31 actively resist the cans being subsequently pulled out by downward pulling.

 The forming of the marginal portions 31 may
15 occur when the blank is formed by using for example simple pressing techniques. Alternatively the forming could occur at the packaging area just prior to application to the cans.

 The side, front and rear panels result in a
20 secure skirt which further prevents unwanted can movement relative to the paperboard holder and relative to other cans.

 In a simpler arrangement (not shown) the panels 14-17, 22 are omitted and the cans are simply
25 retained in the apertures in the top panel 11.

 In the arrangement shown in figures 2 and 3 many of the features of the blank 30 are the same as those in figure 1 and so like parts have been given like reference numerals. In figure 2 the corner
30 panels 22 are provided with extensions 33 which are hingedly connected along fold lines 34 and which in use are locked in any known way or adhered behind the corner portions 24 to provide greater rigidity.

 In figure 3 there is shown the blank 30
35 assembled around cans 35 having top rims 36. The cans

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are shown in side elevation but the blank 30 is shown in section.

A further blank 40 is shown in figures 4 and 5 and again similar features to those in figures 1, 2, 3 have been given like reference numerals. In this embodiment left and right web panels 41, 42 are hingedly connected along fold lines 43, 44 to the top panel 11. A main overpanel 45 is hingedly connected along fold line 46 to web panel 41 and a secondary overpanel 47 is hingedly connected along fold line 48 to web panel 42.

When the blank 40 is being applied, the can rims are pressed through the apertures 12 and then the web panels 41, 42 are folded upwards and then the overpanels 45, 47 are folded across the tops of the cans and secured to each other using adhesive. This construction improves the rigidity of the multipack package.

It will be appreciated that the techniques described above are also suited to can rims/apertures 12 which are not round provided the can rim is a press fit in the aperture. The side skirts and/or top panels are optional features to help the rigidity of the package. They also provide more space for printing of words, logos, information, etc.

The actual dimensions and characteristics of the marginal portion around the aperture are of course variable, and will be dependent largely on the can rim diameter, as well as the thickness and quality of the paperboard being used.

It will be understood that the term "comprises" or its grammatical variants as used herein is equivalent to the term "includes" and is not to be taken as excluding the presence of other elements or features.



CLAIMS

1 In combination, a paperboard member and a plurality of
 cans each of which has a top rim, said paperboard member
 having a plurality of apertures, each of which has a
 5 continuous, unbroken periphery which has a shape
 corresponding to that of the associated top rim and which is
 dimensioned so as to be marginally smaller than the widest
 dimensions of the top rim of the can wherein each top rim and
 each associated aperture are pushed relative to each other so
 10 tha the rim passes through the aperture which engages in
 unbroken fashion below the rim to inhibit withdrawal of the
 can, the paperboard member having two oppositely disposed
 side walls hingedly attached to the paperboard member, the
 side walls being adapted to fold up and over the tops of the
 15 cans and to be secured to each other.

2 A combination as claimed in claim 1, wherein the
 apertures have their marginal portion upturned prior to
 coupling with the can.

3 A combination as claimed in claim 1 or claim 2, wherein
 20 the side walls are secured with glue.

4 A combination as claimed in any one of claims 1 to 3,
 wherein the apertures are substantially circular.

5 A combination as claimed in any one of claims 1 to 4,
 wherein finger gripping holes are provided in the paperboard
 25 member.

6 In combination, a paperboard member substantially as
 described herein with reference to, or with reference to and
 as illustrated by, the drawings and a plurality of cans, each
 of which has a top rim.

30 7 A paperboard member for holding one or more cans, each
 of which has a top rim, said paperboard member having a
 plurality of apertures, each of which has a continuous
 unbroken periphery which has a shape corresponding to that of



the associated top rim and which is dimensioned so as to be marginally smaller than the widest dimensions of the top rim of the can wherein each top rim and each associated aperture are pushed relative to each other so that the rim passes
5 through the aperture which engages in unbroken fashion below the rim to inhibit withdrawal of the can, the paperboard member having two oppositely disposed side walls hingedly attached to the paperboard member, the side walls being adapted to fold up and over the tops of the cans and to be
10 secured to each other.

8 A paperboard member as claimed in claim 7, wherein the apertures have their marginal portion upturned prior to coupling with the can.

9 A paperboard member as claimed in claim 7 or claim 8,
15 wherein the side walls are secured with glue.

10 A paperboard member as claimed in any one of claims 7 to 9, wherein the apertures are substantially circular.

11 A paperboard member as claimed in any one of claims 7 to 10, wherein finger gripping holes are provided in the
20 paperboard member.

12 A paperboard member substantially as described herein with reference to, or with reference to and as illustrated by, the drawings.

13 A method of coupling a can which has a top rim with the
25 paperboard member of any one of claims 7, 9, 10, 11 or 12 including the step of upturning the marginal portion of an aperture before coupling with a can.

Riverwood International Ltd
30 By its registered patent attorneys
Freehills Patent Attorneys

18 November 1997

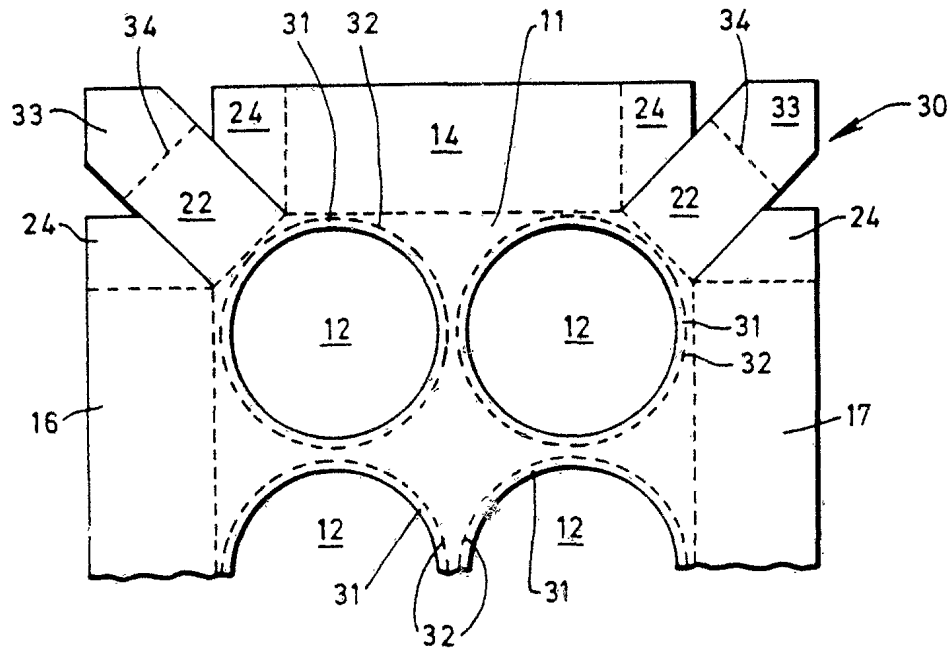


FIG. 2

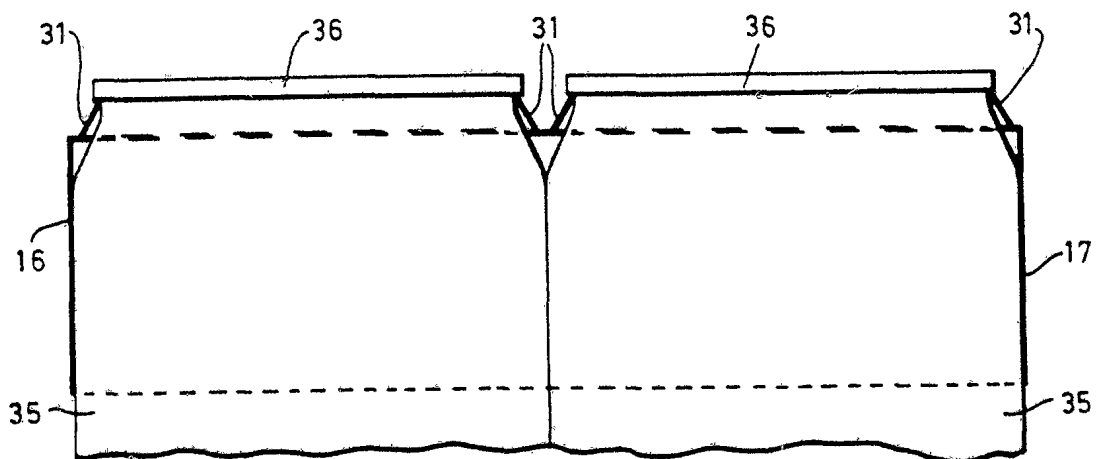


FIG. 3

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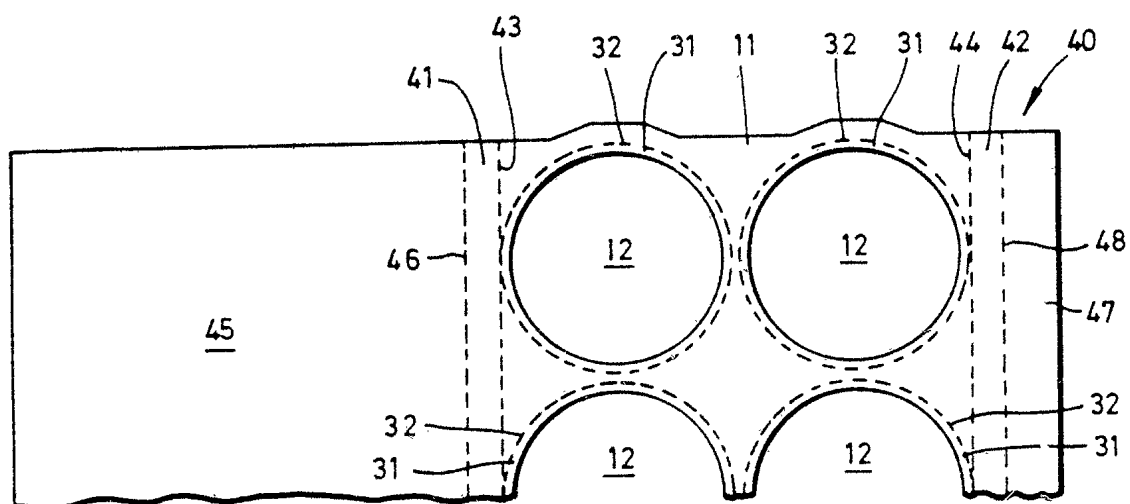


FIG. 4

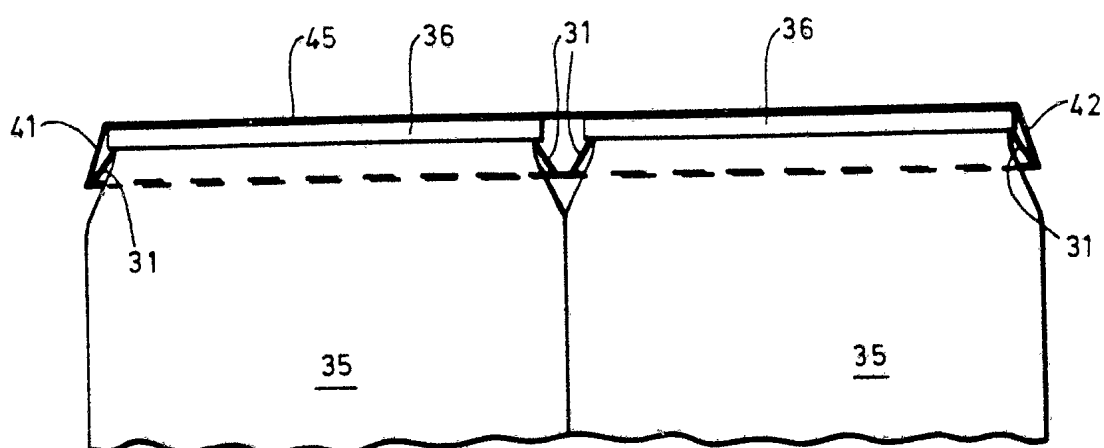


FIG. 5

INTERNATIONAL SEARCH REPORT

Inter national Application No

PCT/GB 93/01695

A. CLASSIFICATION OF SUBJECT MATTER

IPC 5 B65D71/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE,A,20 37 246 (MEAD IMBALLAGE) 11 February 1971 see figures 1,2 ---	1,3,6
X	EP,A,0 346 693 (UNILEVER) 20 December 1989 see abstract; figures ---	1,3,4
X	FR,A,2 363 493 (HEYDEMANN) 31 March 1978 see figures ---	1,6-8
A	NL,A,6 612 684 (MARDON) 14 August 1967 see figures ---	5
A	GB,A,2 108 465 (BEMROSE) 18 May 1983 see page 1, line 92 - line 95; figure 2 ---	1,2,7,8
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- "&" document member of the same patent family

Date of the actual completion of the international search

30 November 1993

Date of mailing of the international search report

- 7. 12. 93

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/GB 93/01695

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB,A,2 170 774 (FEDERAL PAPER BOARD) 13 August 1986 see figures -----	1,2,7,8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/GB 93/01695

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-2037246	11-02-71	FR-A- 2052240	09-04-71
		FR-A- 2082413	10-12-71
		AT-A,B 309319	15-06-73
		BE-A- 758851	12-05-71
		CH-A- 519417	29-02-72
		GB-A- 1325713	08-08-73
		LU-A- 61997	12-08-71
		US-A- 3687281	29-08-72
		CA-A- 963853	04-03-75
		NL-A- 7018747	15-09-71
		SE-B- 365180	18-03-74
EP-A-0346693	20-12-89	DE-A- 3820370	21-12-89
		US-A- 5058735	22-10-91
FR-A-2363493	31-03-78	CH-A- 609637	15-03-79
NL-A-6612684	14-08-67	DE-A- 1536165	08-01-70
		GB-A- 1131945	
		NL-A- 6617174	14-08-67
GB-A-2108465	18-05-83	NONE	
GB-A-2170774	13-08-86	NONE	