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**EUROPEAN PATENT APPLICATION**

⑲ Application number: **88310834.2**

⑤① Int. Cl.4: **B 67 D 1/08**

⑳ Date of filing: **16.11.88**

③① Priority: **16.11.87 GB 8726782**

④③ Date of publication of application:  
**24.05.89 Bulletin 89/21**

⑧④ Designated Contracting States:  
**AT DE ES FR IT NL**

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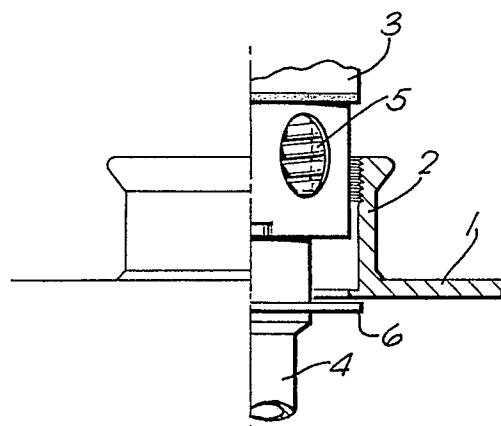
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⑤④ **Safety device for an extractor tube assembly in a beverage container.**

⑤⑦ An extractor tube fitting (3) for the outlet (2) of a beverage container (1) is of a type wherein the head of the tube (4) may be depressed against a spring (5) relative to the fitting (3). The fitting (3) is a screw fit within the outlet (2). The fitting is improved by provision of a laterally extending abutment member (6) with one transverse dimension such that when the fitting (3) is unscrewed, as shown, the assembly cannot be removed from the container. By use of a special tool and manipulation technique the fitting can be removed for repair or replacement if necessary.

*FIG. 2*



## Description

### Safety Device for an Extractor Tube Assembly In a Beverage Container

This invention relates to an improvement in and a safety device for an extractor tube assembly used in a beverage container and is particularly concerned with the adaptation of an existing extractor tube assembly to render same more safe and tamper proof.

This invention is primarily concerned with an extractor tube of the kind which is mounted in a fitting securable within the outlet of a beverage container and in which the extractor tube is displaceable downwardly into the container against a spring during broaching of the container.

According to this invention there is provided a modification to the extractor tube used in a beverage container the modification comprising the provision of an abutment member secured to the extractor tube and extending laterally thereof adjacent the outlet of the container, the member having a major lateral dimension greater than the container outlet opening and a minor lateral diametric dimension less than the container outlet opening, the member being positioned along the length of the extractor tube such that removal of the fitting carrying the extractor tube is not normally possible by virtue of the member abutting the outlet but wherein the extractor tube may be displaced downwardly whereby the extractor tube assembly may be canted to allow the member to pass through the aperture of the outlet.

In a preferred embodiment the member comprises a plate. The major and minor dimensions will lie generally at right angles to each other. In another preferred embodiment the member has opposed laterally extending limbs more particularly the abutment member has limbs extending laterally of the extractor tube one to each side thereof, said limbs defining the major lateral dimension.

Preferably the strip is continuous and of an elongate parallel sided shape, a central section embracing the extractor tube and secured thereto.

To enable the invention to be more clearly understood reference is now made to the accompanying drawings showing an embodiment and modification thereof by way of examples and the method of operation.

Referring to the drawings,

Figure 1 shows in diagrammatic side view an extractor tube and fitting located within the outlet of a beverage container,

Figure 2 shows the fitting when unscrewed to the limit from the outlet,

Figure 3 shows the fitting when unscrewed and subject to manipulation to enable the extractor tube fitting to be removed,

Figure 4 shows in plan view the plate secured to the extractor tube,

Figure 5 shows in side view a second embodiment partially cut away,

Figure 6 shows a view in direction A of Figure 5, and

Figure 7 shows a tool for facilitating withdraw-

wal of the assembly.

Referring to Figures 1 and 2 of the drawings, a beverage container 1 has an outlet aperture defined by an upstanding collar 2 which receives an extractor tube fitting 3. The fitting comprises a top portion which engages the outlet 2 by means of screw threading 3a, a valve assembly (not shown in detail) and an extractor tube 4 which extends nearly to the bottom of the container. The valve assembly operates in a manner which is known and during the course of broaching the container through fitment of a suitable coupling head the extractor tube 4 is depressed against spring 5 and displaced downwardly. Welded or otherwise affixed to the extractor tube is an abutment member comprising a plate 6 which constitutes an improvement according to the present invention.

Referring to Figure 4, the plate has a diametric dimension A which is greater than the outlet opening aperture and a diametric dimension B which is less than the outlet opening aperture. The profile of the plate is therefore generally of an elliptical form.

When the fitting 3 is removed by unscrewing same from the outlet collar 2, the assembly may be withdrawn only as far as the position shown in Figure 2 whereby the plate 6 abuts the inside of the outlet aperture. The assembly cannot be withdrawn any further than this and the plate therefore provides a safety feature which prevents the assembly being propelled out of the container when under gas pressure. It also hinders rapid removal of the contents of the container. This applies even if the extractor tube is displaced to the open position by a top coupling.

However, if it is required to remove the extractor tube and valve fitting for servicing and replacement then by application of an adapter piece to a normal coupling head or by using a suitable special coupling head tool (see Figure 7) the extractor tube may be depressed against the spring 5 to the limit as shown in Figure 3 wherein the coils become spring bound. When in this position sufficient clearance is provided between the fitting and outlet to enable the whole extractor tube assembly to be canted as shown thereby to allow the plate to pass through the outlet aperture.

The positioning of the plate 6 is arranged so that if the extractor tube is depressed using the normal coupling head insufficient clearance is provided to enable the fitting to be canted sufficiently for the plate 6 to be passed through the outlet aperture.

The plate 6 will generally be secured by welding but other fixing methods are possible. The invention is applicable to extractor tube fittings generally called "Sankey" Well Type Fittings or "Combi" Fittings, or to any extractor tube where the tube moves vertically and is generally part of the valve arrangement. Such fittings are also known as "Draft" systems type fittings.

Figures 5 and 6 show a second embodiment wherein the abutment member 7 has opposed

laterally extending U-shaped limbs 8. The member is formed from a metal strip cut from a tube, for example and is spot welded to tube 4 at locations 9. The extractor tube fitting which is of a known kind is shown in more detail in these Figures 5 and 6. A chamfer 8a may be provided to ease removal of the assembly from a container.

This embodiment has the advantage of allowing washing and drying to be more adequately effected as areas which may hide contaminants are largely avoided.

Figure 7 shows a special tool which is used to depress the extractor tube downwardly as far as possible to the spring bound position following which removal of the complete assembly may be made. The tool has a body 10 with pivoted actuating handle 11 and is basically a standard coupling head. The central valve operating core 12 has an adaptor plug 13 fitted and this serves to depress the top of the extractor tube in the fitting by a greater amount than normally required to allow removal.

The special tool or coupling head with adaptor can only be fitted and operated to the necessary stroke when the extractor tube is unscrewed from the outlet of the container, otherwise the clearance between the bottom of the tube and the container is insufficient to allow the special tool to be operated fully to lock the handle down and effect removal of the tube from the container.

## Claims

1. An extractor tube assembly for a beverage container, the assembly having an extractor tube mounted in a fitting securable within the outlet of a beverage container and in which the extractor tube is displaceable downwardly into the container against a spring during broaching of the container, characterised by the provision of an abutment member secured to the extractor tube and extending laterally thereof adjacent the outlet of the container, the member having a major lateral dimension greater than the container outlet opening and a minor lateral diametric dimension less than the container outlet opening, the member being positioned along the length of the extractor tube such that removal of the fitting carrying the extractor tube is not normally possible by virtue of the member abutting the outlet but wherein the extractor tube may be displaced downwardly whereby the extractor tube assembly may be canted to allow the member to pass through the aperture of the outlet.

2. An assembly according to Claim 1, wherein the abutment member comprises a plate of generally elliptical or oval planform.

3. An assembly according to Claim 1, wherein the abutment member has limbs extending laterally of the extractor tube one to each side thereof, said limbs defining the major lateral dimension.

4. An assembly according to Claim 3, wherein the abutment member comprises a strip formed to a U-shape and defining a limb.

5. An assembly according to Claim 4 wherein the strip is continuous and of an elongate parallel sided shape, a central section embracing the extractor tube and secured thereto.

6. An assembly according to any preceding claim, wherein the extractor tube is of metal and the abutment member is of metal secured by a weld.

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FIG. 1

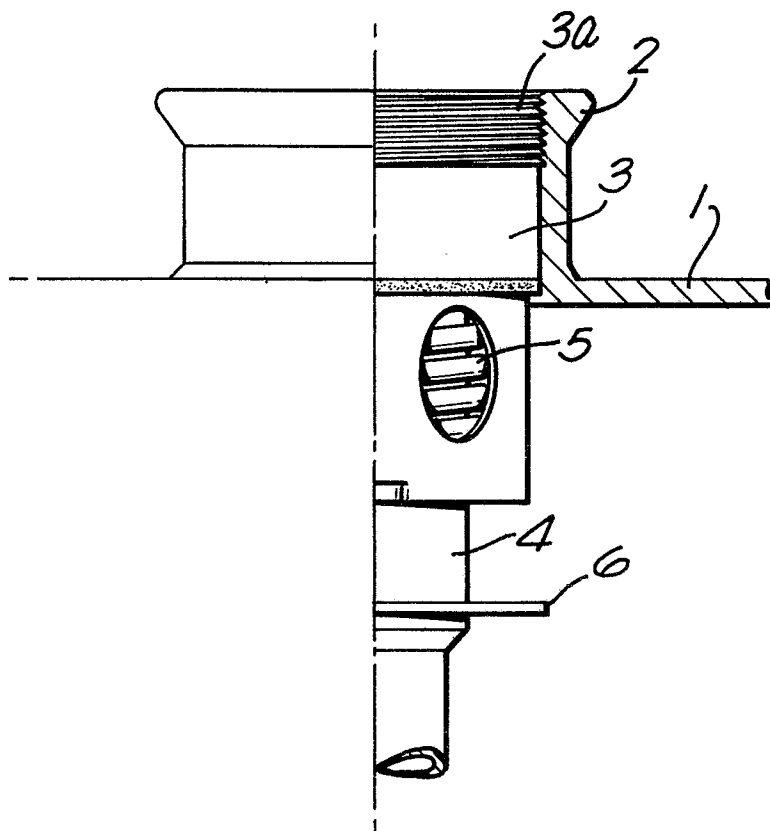


FIG. 2

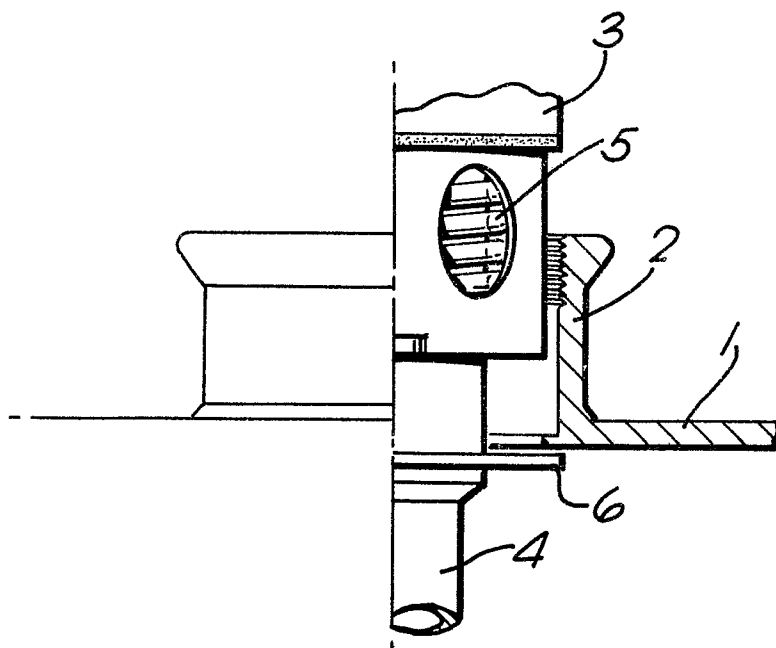


FIG. 3

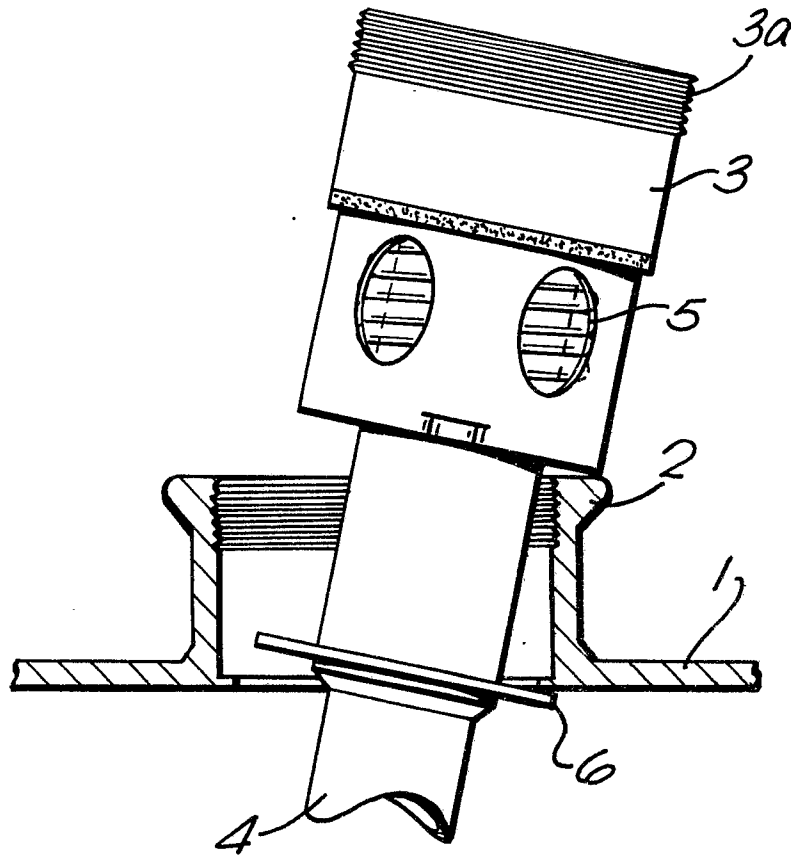
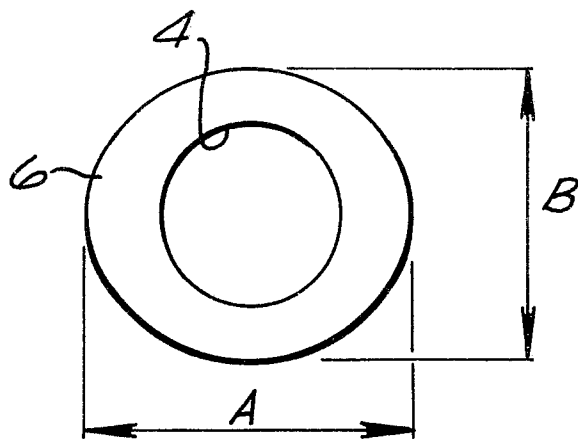


FIG. 4



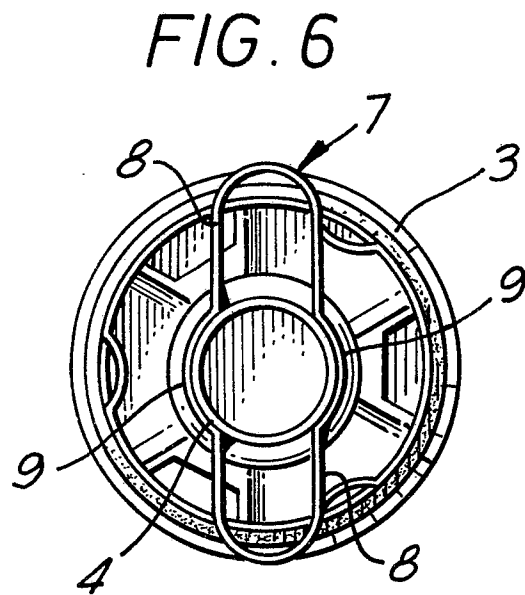
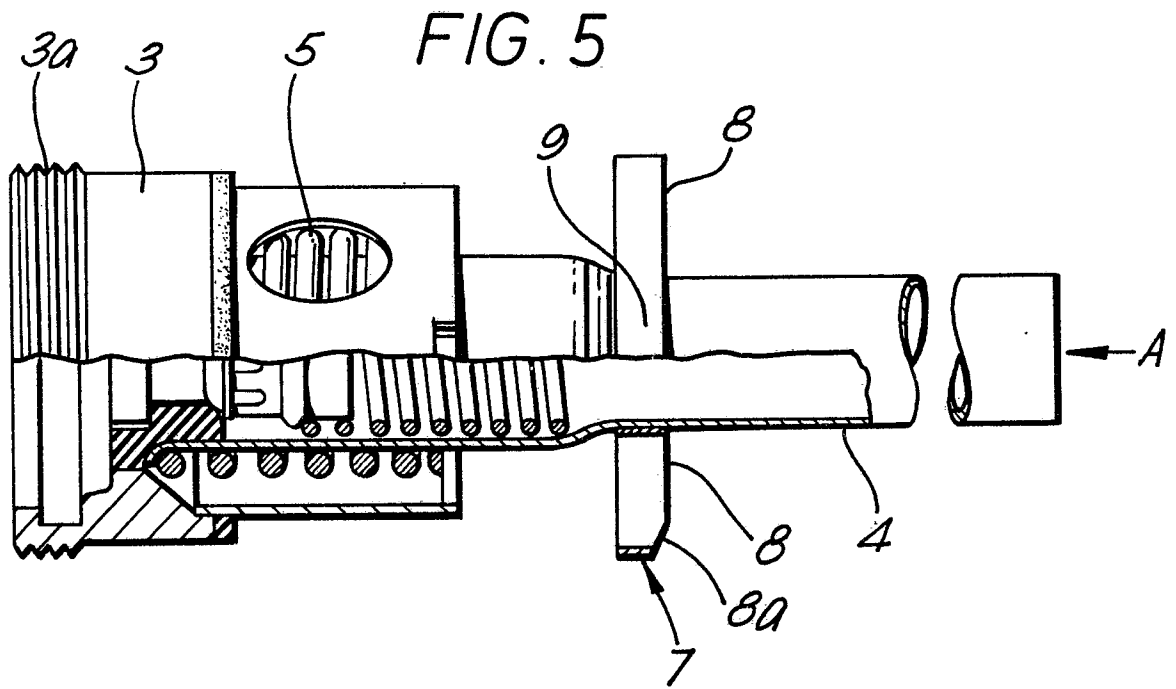
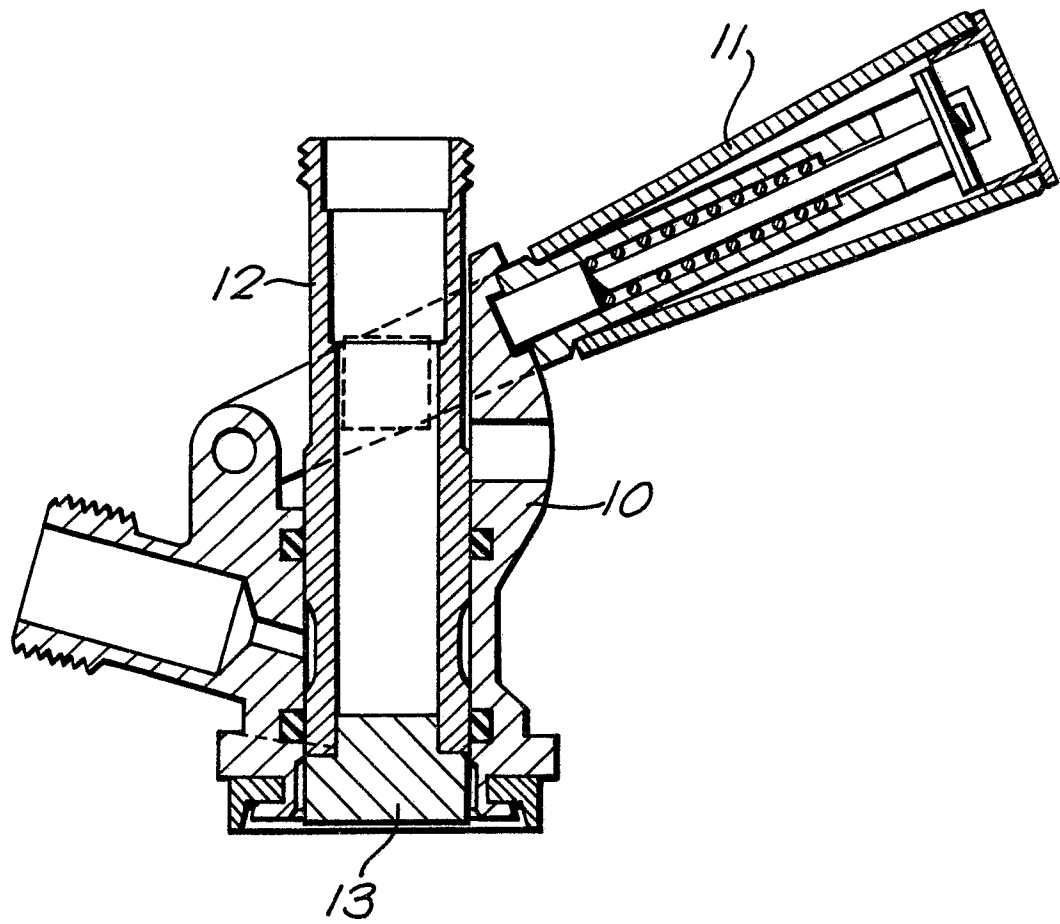


FIG. 7





| 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.4) |
| A                                                                                                                                                                                                                       | GB-A-2 170 488 (GRUNDY LTD)<br>* Whole document *<br>---                      | 1                                                                                                                                                                                                                                                                                     | B 67 D 1/08                                   |
| A                                                                                                                                                                                                                       | GB-A-2 158 906 (MICRO MATIC)<br>* Page 1, lines 115-124; figures 8,9 *<br>--- | 1                                                                                                                                                                                                                                                                                     |                                               |
| A                                                                                                                                                                                                                       | DE-A-3 201 365 (BECKMANN)<br>* Abstract *<br>---                              | 1                                                                                                                                                                                                                                                                                     |                                               |
| A                                                                                                                                                                                                                       | US-A-1 836 729 (ROLLASON)<br>* Page 1, lines 34-37; figure 2 *<br>-----       | 1                                                                                                                                                                                                                                                                                     |                                               |
|                                                                                                                                                                                                                         |                                                                               |                                                                                                                                                                                                                                                                                       | TECHNICAL FIELDS SEARCHED (Int. Cl.4)         |
|                                                                                                                                                                                                                         |                                                                               |                                                                                                                                                                                                                                                                                       | B 67 D<br>B 65 D<br>F 16 L                    |
| The present search report has been drawn up for all claims                                                                                                                                                              |                                                                               |                                                                                                                                                                                                                                                                                       |                                               |
| Place of search<br>THE HAGUE                                                                                                                                                                                            |                                                                               | Date of completion of the search<br>17-02-1989                                                                                                                                                                                                                                        | Examiner<br>SCHELLE, J.                       |
| <b>CATEGORY OF CITED DOCUMENTS</b>                                                                                                                                                                                      |                                                                               |                                                                                                                                                                                                                                                                                       |                                               |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                               | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                               |