

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 0 777 007 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**04.06.1997 Bulletin 1997/23**

(51) Int. Cl.<sup>6</sup>: **D06B 23/10**

(21) Application number: **96118649.1**

(22) Date of filing: **20.11.1996**

(84) Designated Contracting States:  
**DE FR GB**

(30) Priority: **29.11.1995 IT MI952495**

(71) Applicant: **CUBOTEX S.r.l.**  
**I-20123 Milan (IT)**

(72) Inventor: **Cutrone, Marino**  
**20010 Vanzago (Prov. of Milano) (IT)**

(74) Representative: **Modiano, Guido, Dr.-Ing. et al**  
**Modiano & Associati S.r.l.**  
**Via Meravigli, 16**  
**20123 Milano (IT)**

**(54) Sampling device for units for dyeing textile materials**

(57) A sampling device for units for dyeing textile materials, which has the particularity that it comprises a sampling chamber (2) affected by the circulation of at least one portion of a dyeing bath of a unit for dyeing textile materials. The chamber contains means (21) for moving a sample (20) of the textile material being processed.

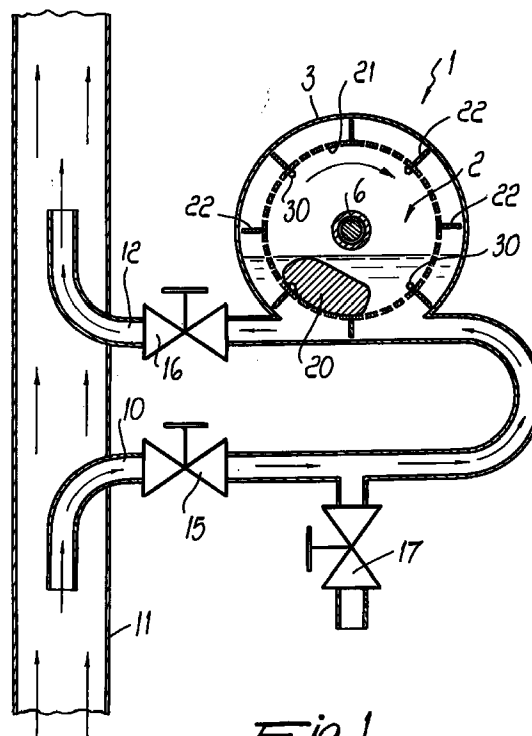


*Fig. 1*

**EP 0 777 007 A1**

## Description

The present invention relates to a sampling device for units for dyeing textile materials.

It is known that during operations for dyeing textile materials it is necessary to monitor the progress of the dyeing operations in order to check whether the various textile materials have assumed the intended color.

Sampling devices for performing these checks are already known and are constituted in practice by a chamber that lies outside the dyeing unit, is affected by the dyeing bath, and contains a sample of the same kind as the textile material being dyed, which can be removed to monitor the progress of the dyeing operations.

The operations for dyeing textile materials are very often performed by moving the items around in the dyeing bath; accordingly, the sample, which is instead static inside the chamber of the sampling device, can be dyed differently and furthermore tends to act like a plug or filter at the outlet duct of the sampling device, consequently leaving crease marks and producing a very poor optical effect with color mismatch.

In order to try and obviate this drawback, other solutions have also already been used which in practice place the sample of textile material in a drum located inside the dyeing unit.

This embodiment, which has the advantage of giving the sample a color and a treatment that is fully similar to the remaining part of the textile materials, nonetheless has the drawback that in order to inspect the sample it is necessary to discharge the dyeing bath at least partially and to open the machine, which very often is pressurized and at high temperature, with obvious difficulties in removing the sample.

The aim of the invention is indeed to solve the above described problems, providing a sampling device for dyeing units for textile materials that allows to perform on the sample of textile material the same treatment to which the textile materials being dyed are subjected, without however having to directly access the inside of the machine to remove the sample.

Within the scope of this aim, a particular object of the invention is to provide a sampling device that can be used to treat any type of textile material, always providing a safe indication of the progress of the treatment.

Another object of the present invention is to provide a sampling device that can be applied to any type of dyeing apparatus and always has optimum effects, with a sample that does not suffer from crease marking effects and without color differences with respect to the textile materials being treated.

Another object of the present invention is to provide a sampling device which by virtue of its particular constructive characteristics is capable of giving the greatest assurances of reliability and safety in use.

This aim, these objects, and others that will become apparent hereinafter are achieved by a sampling device for units for dyeing textile materials, characterized in

that it comprises a sampling chamber that is affected by the circulation of at least one portion of a dyeing bath of a unit for dyeing textile materials, means for moving a sample of the textile material being processed being provided in said chamber.

Further characteristics and advantages will become apparent from the description of a preferred but not exclusive embodiment of a sampling device for units for dyeing textile materials, according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a schematic sectional view of the sampling device according to the invention;

figure 2 is a sectional view of the sampling chamber, taken along a plane that lies at right angles to the sectional plane of figure 1.

With reference to the above figures, the sampling device for units for dyeing textile materials, according to the invention, which is generally designated by the reference numeral 1, comprises a sampling chamber 2 that is formed inside a cylindrical box-like body 3 that is closed at the front by a cover 4 that can be applied hermetically and is locked by means of a nut 5 or the like connected to a shaft 6 that protrudes from the bottom of the box-like body.

Said chamber 2 is affected by the circulation of the dyeing bath of the dyeing unit, which is produced by means of an intake duct 10 that draws the bath directly from the duct 11 for the circulation of the dyeing bath of the dyeing unit and by a return duct 12 that leads out of the chamber 2 and returns the bath into the circulation duct 11.

The duct 10 is controlled by an intake cutoff valve 15 and the duct 12 is controlled by a discharge cutoff valve 16.

A drain valve 17 is also provided between the chamber 2 and the valve 15.

An important particularity of the invention is constituted by the fact that means for moving the sample 20 of the textile material being processed are provided in the chamber 2.

The movement means are constituted, for example, by a rotating drum 21 provided with radial fins 22 which, by utilizing the circulation of the bath, move the drum, which rotates and accordingly always keep the sample 20 in motion.

Inside the drum 21, which is supported so that it can rotate about the shaft 6, there are agitator means constituted, for example, by protrusions 30 on the internal surface of the drum; during the rotation of the drum, said protrusions cause an additional movement of the sample 20, which is therefore subjected to the same treatment as the textile material inside the dyeing unit.

In order to inspect the sample, it is sufficient to close the valves 15 and 16, interrupting the connection to the circulation duct, and after opening the drain valve that discharges the dyeing bath contained in the cham-

ber 2, it is possible to easily remove the sample to check the state of the process.

With the described arrangement it is therefore possible to subject the sample to the same type of treatment as the textile materials inside the dyeing unit, since said sample is kept moving; moreover, there is the advantage that the movement is produced directly by the circulation of the dyeing bath, without having to provide special mechanisms for rotating the drum.

Another important aspect is furthermore constituted by the fact that it is possible to remove the sample without having to remove the bath from the dyeing unit.

The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, as well as the contingent shapes and dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. Sampling device for units for dyeing textile materials, characterized in that it comprises a sampling chamber (2) that is affected by the circulation of at least one portion of a dyeing bath of a unit for dyeing textile materials, means (21) for moving a sample (20) of the textile material being processed being provided in said chamber (2).
2. Sampling device according to claim 1, characterized in that said movement means (21) are actuated by the circulation of said at least one portion of the dyeing bath.
3. Sampling device according to the preceding claims, characterized in that said sampling chamber (2) is formed by a cylindrical box-like body (3) that is closed at the front by a cover (4), a drum (21) being rotatably supported in said chamber (2) and constituting said movement means.
4. Sampling device according to one or more of the preceding claims, characterized in that said drum (21) is peripherally provided with radial fins (22).
5. Sampling device according to one or more of the preceding claims, characterized in that it comprises an intake cutoff valve (15), which is arranged on the intake duct (10) that branches off from the dyeing bath circulation duct (11), and a discharge cutoff valve (16) that is arranged on the return duct (12) in said dyeing bath circulation duct (11).
6. Sampling device according to one or more of the preceding claims, characterized in that it comprises a drain valve (17) that is arranged between said intake cutoff valve (15) and said discharge cutoff valve (16).
7. Sampling device according to one or more of the preceding claims, characterized in that it comprises means (30) for agitating said sample (20), said means (30) being arranged inside said drum (21).
8. Sampling device according to one or more of the preceding claims, characterized in that said agitator means are constituted by protrusions (30) provided on the inner surface of said drum (21).

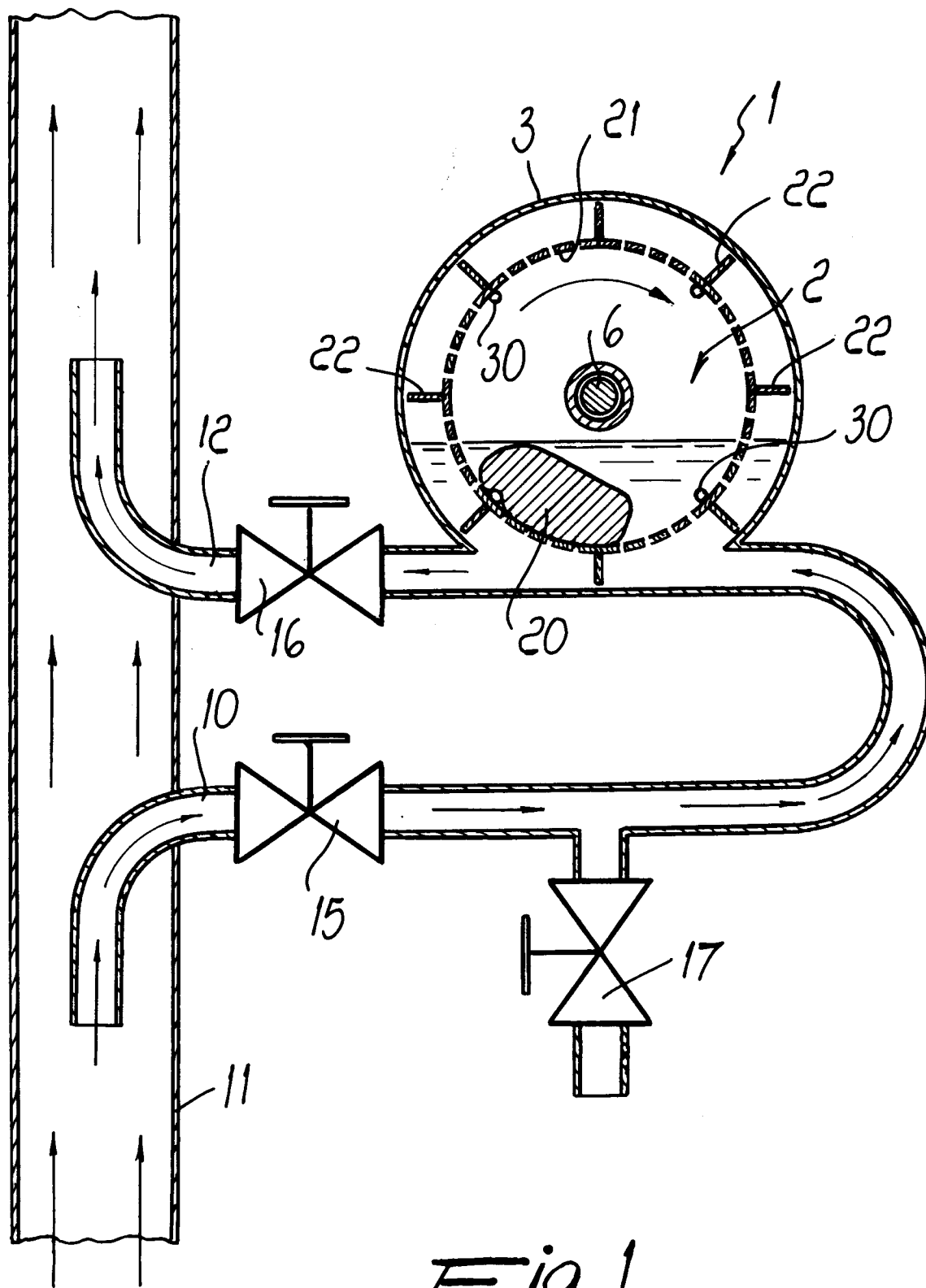


Fig. 1

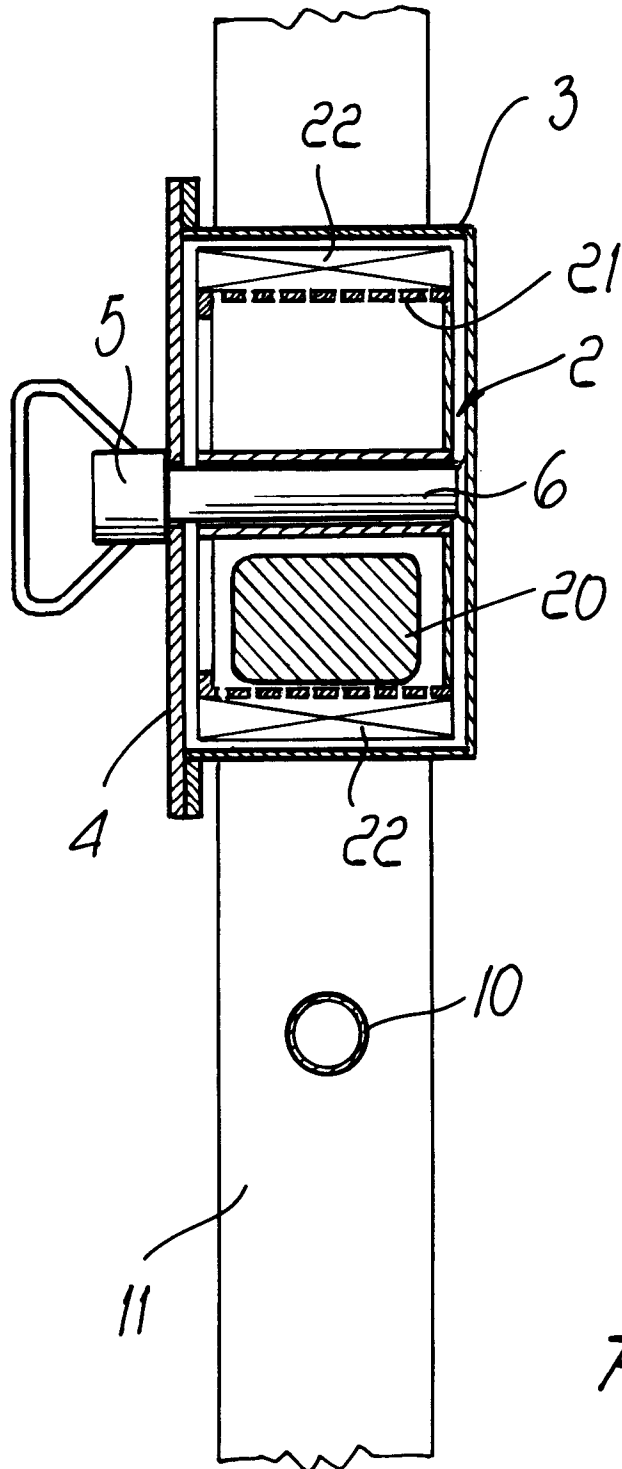


Fig. 2



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 96 11 8649

| 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.6) |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | GB 1 391 429 A (SAMUEL PEGG & SON LTD.)<br>* page 2, line 25 - line 42 *<br>* page 3, line 32 - line 111 *<br>----- | 1,2,5,6                                          | D06B23/10                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                     |                                                  | TECHNICAL FIELDS SEARCHED (Int.Cl.6)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                     |                                                  | D06B                                         |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                     |                                                  |                                              |
| Place of search<br>THE HAGUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                     | Date of completion of the search<br>4 March 1997 | Examiner<br>Goodall, C                       |
| <p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>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</p> <p>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/> &amp; : member of the same patent family, corresponding document</p> |                                                                                                                     |                                                  |                                              |

EPO FORM 1503 01.82 (P04C01)