



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 022 516 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
26.07.2000 Bulletin 2000/30

(51) Int. Cl.⁷: **F24B 15/00, F24B 1/19**

(21) Application number: **99500229.2**

(22) Date of filing: **01.12.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **04.12.1998 ES 9803087 U**

(71) Applicant: **Yusecu, S.A.**
28006 Madrid (ES)

(72) Inventor:
Armendariz Bru, José Martin
28006 Madrid (ES)

(54) **Air pump for the acceleration of the combustion applicable for recuperators, fire places and alike**

(57) This invention consists of a portable air pump that conveniently positioned close to a fire place will accelerate the rate of combustion.

With this device there is no longer a need to take care of the fireplace, especially during the first stage of the combustion process, with the use of certain traditional elements such as a bellow; rather, this battery run device allows for an air flow to be directed to the charcoal where the combustion is taking place, in a continu-

ous and unoform manner, thus allowing for the flame to become stronger. This process may take a few minutes (depending on the quality of the wood) until the flame is so strong that the device may be switched off

Evidently, this process may be repeated when and as necessary, especially if the flame is becoming weaker or if more wood is being added to the fire place.

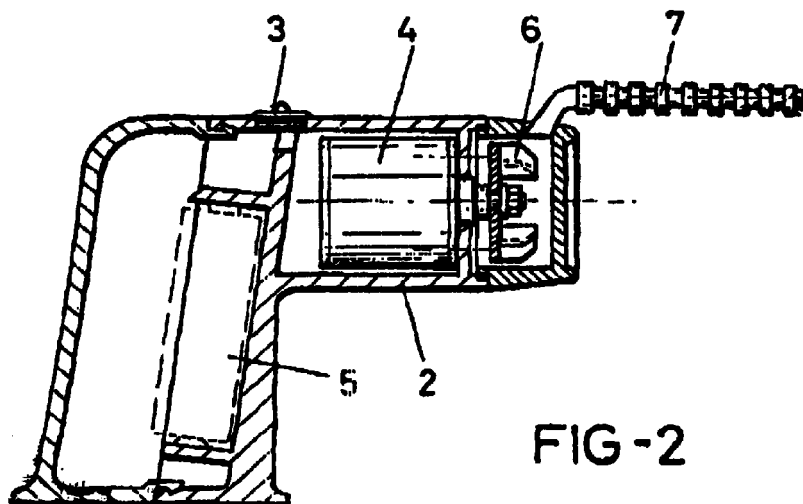


FIG -2

EP 1 022 516 A2

Description

PURPOSE OF THE INVENTION

[0001] This report refers to a request for grant of a European patent, of an air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, with the evident purpose of obtaining through this mechanism an air flow driven through a tube made up of fireproof material, that may also be twisted and oriented as necessary, and that could well have a telescopic shaping, such that the user may pump an air flow directly to that place in the house where the first stage of the combustion process is taking place, as an element of a heat generator, thus allowing for the acceleration of the combustion of the material that is being used. As a result, the heat generator rapidly comes into service.

FIELD OF INVENTION

[0002] This invention stems from that industry dedicated to appliances, devices and other mechanisms applicable for fire places and alike, although it may also be related with that industry that produces fans and portable dryers.

HISTORICAL BACKGROUND RELATED TO THE INVENTION

[0003] Traditionally, when preparing small braziers, by mixing the different elements required to put it into service, the person in charge introduced slack and resin kindlings, and used, generally, newspaper in order to begin with the combustion of the latter, that were used as a heat generator in the first stage of the combustion of the mineral or vegetal charcoal, that served as a heating source.

[0004] Depending on the weather conditions and the dampness of the kindlings being used, the user was left with no choice but to make use of the typical fan, made up of flexible material and that came out of a stem that served as a grip, that enabled an air flow that accelerated the combustion of the kindlings, hence leading to the ignition of these and consequently allowing for the combustion of the charcoal.

[0005] In the same manner, when the charcoal was covered by ash, with the help of a fire shovel and the fan above described, it was possible to rekindle the combustion of the remaining charcoal.

[0006] With time, this fan was eventually substituted by a bellow, made up of two elements of rigid material linked by an element of flexible material, with a common mouthpiece made up of fireproof material, and that as a result of opposite movements of these two elements, an air flow was generated, thus allowing a traditional kitchen to come into service. These kitchens generally worked with wood and charcoal, the latter not always of

the best quality and thus requiring the former in order to attain a desirable degree of combustion.

[0007] Nowadays, fire places are common, especially, in mountainous and coastal areas, as a means of generating heat; in some cases the fire place may include a recuperator, equipped with heat resistant glazed doors. By making use of wood logs and kindlings, and with the help of auxiliary devices, it is possible that the heat generated by the charcoal is transmitted by means of several fans installed within the recuperator, such that the room where the latter is heated up as a result of this process.

[0008] Nonetheless, in many cases due to the fact that the wood is greenish, it is difficult to attain a rapid and efficient functioning of the fire place. It therefore becomes necessary to make use of several auxiliary elements, such as a bellow in order to accelerate the combustion process. Since using a bellow is uncomfortable, it is not usually used in a timely and continuous manner thus delaying the heating up of the charcoal.

[0009] The solution to this problem would be easy if there were a portable, and battery run mechanism that served as an air pump, thus allowing for the functioning of a fan or turbine, that generated an air flow, driven through a fire proof tube, and that could be easily positioned in several ways, and even had a telescopic form. Hence, there would be a continuous air flow, that could be directed to the charcoal in order to accelerate its combustion, with the sole purpose of obtaining a flame. However, the applicant has no knowledge that there is a mechanism with these characteristics, and that have been described above.

DESCRIPTION OF THE INVENTION

[0010] The proposed air pump for the acceleration of the combustion applicable for recuperators, fire places and alike to which this request refers to, constitutes itself a true novelty that substitutes, with important improvements, the traditional fan described above, as well as the bellow, mainly as a result of the fact that the air flow proves to be continuous and uniform, until the charcoal attains the desired rate of combustion.

[0011] More specifically, the air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, is made up of appropriate, resistant and fire proof material, such that it may be conveniently placed close to the fire place, so that there may be a continuous air flow towards the charcoal, eliminating the need for the user to be constantly overseeing the progress of the combustion process, as is the case when using a bellow. This is so the case, as a result of the air pump itself, that comes with a little motor within and that as a result of the action of one or several batteries, may be turned on by means of an external switch, may allow for an air flow to be driven through a fire proof and flexible tube, even telescopic. This would enable a continuous and uniform flow of air, directed

towards the charcoal, at the point where the combustion process is being initiated, thus providing greater benefit to the user by a rapid combustion of the charcoal. It would be convenient to say that the quality of the material used for the combustion, will obviously determine the rapidity of this process.

DESCRIPTION OF THE FIGURES

[0012] In order to provide a full explanation of the invention, and with the sole purpose of providing an easier understanding of the proposed mechanism, this report has an annex consisting of two figures so that an illustrative explanation may also be given.

Figure number 1, shows a sided-view of the mechanism, the air pump for the acceleration of the combustion applicable for recuperators, fire places and alike.

Figure number 2, shows a more detailed view of the mechanism in the same manner that the above has been drawn. Indeed, the casing, the motor and the battery device are partitioned so that a more accurate representation may be given.

PROPOSED FABRICATION OF THE INVENTION

[0013] By examining the above mentioned figures, it can be seen that the air pump for the acceleration of the combustion applicable for recuperators, fire places and alike (1), is made up initially of a casing (2) produced in any appropriate rigid material, along with a complementary piece (2') that serves as a cap and that serves as a compartment (2) for the batteries (5), that generate the necessary supply for the motor (4), which in turn makes the turbine (6) work, such that its air flow is driven through a fire proof tube (7), that may be made up of flexible material, that could even have a telescopic shape. The motor (4) can be turned on, at the same time the turbine is (6), by having the user activating the internal switch (3), situated on the main casing (2) of the elements that make possible the pumping of air (1).

[0014] It is not deemed necessary to make a more detailed analysis of this description without having an expert understand the extent of this invention and the advantages that it offers.

[0015] The materials, shaping, size and the arrangement of the elements may be changed, always bearing in mind that the essentiality of the invention is always safeguarded. Hence, the terms of this report should be examined with an extensive, and in no way limitative, viewpoint

Claims

1. Air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, made up of a casing fabricated in a rigid material,

and that may be positioned in any way close to the fire place; the casing (2) is enabled with a cap that may be fitted to it (2'), that allows for the batteries (5) to be fitted within it, and with sufficient space for a battery run motor (4), that moves a turbine (6) that eventually drives an air flow through a tube (7) situated at one end of the air pump (1). This tube is made up of fireproof material.

2. Air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, according to the first claim, the tube (7) through which the air flow is driven, and that is generated by a turbine (6), may have a telescopic shaping and may, thus, be partially deformable.

3. Air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, according to the previous claims, with a casing that has a switch (3) on the upper part of the device, so that the motor may be turned on, and thus allowing for the functioning of the turbine (6).

4. Air pump for the acceleration of the combustion applicable for recuperators, fire places and alike, according to the previous claims, that is enabled to be positioned in any way, always having the air flow directed to the point where the combustion is taking place.

