The present invention discloses an oven cover fixing apparatus that includes a stove and a cover. The cover is fixed on the stove through a fixing rack, and the bottom of the fixing rack is fixed onto the stove, and the top of the fixing rack has a stop portion for retaining and limiting the position of the cover, and the cover can press against the stop portion to fix the stove. If it is necessary to install the cover to the top of the stove, users simply need to press the cover at the stop portion of the fixing rack. To remove the cover, users simply take the cover away from the stop portion. The present invention has the advantage of providing a convenient operation.
FIG. 6

FIG. 7
OVEN COVER FIXING APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] The present invention relates to a gas oven technology, and more particularly to a stove and a cover fixing apparatus of an infrared oven.
[0003] 2. Description of the Related Art
[0004] In a gas oven, particularly an oven with an infrared stove, a heat-resisting and highly conductive cover is installed on top of the infrared stove to protect the stove, prevent foreign substances from clogging flame holes of the infrared stove, and assure a good grilling and baking effect. Since food debris and sauces may drop and drip on the cover during the baking process, it is necessary to remove and clean the cover after cooking to prepare for next use. Therefore, a special design for conveniently installing/removing the cover to/from the stove is needed.
[0005] Among various different shapes of covers, arc covers give the best grilling and baking effect, but the installation and removal of an arc cover is very troublesome. If the installation distance is inappropriate (either too far or too near), then the burning effect will become poor and waste energy. If the installation method is improper, the cover may be broken by users easily during the installation and removal process, and thus not only incurring a loss economically, but also causing accidents and injuries. Obviously, drawbacks of this sort bring tremendous troubles to gas oven manufacturers, sellers and users.

SUMMARY OF THE INVENTION

[0006] Therefore, it is a primary objective of the present invention to overcome the foregoing shortcomings of the prior art by providing an oven cover fixing apparatus that provides a good burning effect of the oven and a convenient installation/removal of the cover.
[0007] To achieve the foregoing objective, the present invention fixes a cover onto a stove though a fixing rack, wherein the bottom of the fixing rack is fixed on the stove, and the top of the fixing rack has a stop portion for carrying and limiting the position of the cover, and the cover is pressed against the stop portion to fix the stove. If it is necessary to install the cover to the top of the stove, users just need to press the cover against the stop portion of the fixing rack. To remove the cover, users simply take the cover away from the stop portion, and the aforementioned operation is very convenient.
[0008] To prevent the cover from sliding down from the fixing rack while the oven is in use, designers can design a side flange on the external lateral side of the fixing rack to prevent the cover from sliding out.
[0009] In addition, the longitudinal section of the fixing rack is preferably in an inverted L-shape with a bent edge at an upper portion having a shape corresponding to the portion of connecting the cover, and the stop portion is fixed to the corner of the L-shaped fixing rack. Therefore, the cover can be fixed securely, and the cover can be installed and removed conveniently, and the height of the bottom of the fixing rack stop portion can be set according to the required installation height of the cover.
[0010] To facilitate the installation without making substantial changes to the existing structure of the stove, the fixing rack can be fixed onto the stove by a pressure plate with a right-angled section, and the horizontal plane of the pressure plate is fixed onto the stove, and the fixing rack is fixed onto the vertical plane of the pressure plate, and the structure gives a convenient way of installing each component without substantially changing the structure of the stove. With the method of fixing the cover to the stove by a pressure plate, the stove needs no change at all.
[0011] Four fixing racks can be installed and fixed onto the stove and at positions corresponding to four corners of the cover. During use, three of the four fixing racks are fixed directly onto the stove, and the remaining fixing rack is movably coupled to the stove by a screw module, and thus the installation and removal procedure of the cover can be simplified, and users simply operate one of the fixing racks for the installation and removal.
[0012] The screw module includes a stud, a washer installed on an internal side of the vertical plane of a pressure plate, and a screw hole disposed on a fixing rack and having a diameter slightly greater than a screw thread of a stud. The stud sequentially passes through the screw hole and the vertical plane of the pressure plate, and the washer fixes the fixing rack onto the pressure plate. The diameter of the screw hole is greater than the external diameter of the stud, so that when the stud is loosened, the fixing rack can be shifted horizontally sideways to an appropriate position as needed and secured with the stud. Such arrangement makes the fixation, installation and removal of the cover much easier and more convenient.
[0013] The screw module can be in the form of a stud, a washer installed on an internal side of a vertical plane of a pressure plate, and a stop washer installed between a stud and an stove plate winged flange, and the fixing rack has a screw hole with a diameter slightly greater than the external diameter of the screw thread of the stud, and the stud is substantially in a ladder shape with two thin heads and a thick middle, and its front end has a screw thread and the stud is passed sequentially through the screw hole, the vertical plane of the pressure plate and the washer to fix the fixing rack onto the pressure plate, wherein the middle has serrations. The middle of the stop washer has a block protruded from the surface of the stop washer for preventing the stud from being rotated in a reverse direction, and such method gives a more convenient operation to the stud.
[0014] The stud passes through the screw hole and the vertical plane of the pressure plate, and the front corner portion of the washer has a protrusion for preventing the stud from being separated from the fixing rack, such that the stud is maintained in the fixing rack to prevent the stud from being separated from the fixing rack or missing by accident.
[0015] The rear portion of the stud includes a penetrating hole, and the handle is passed through the penetrating hole, and an upper end portion and a lower end portion of the handle have a stop handle for separating the stop portion of the penetrating hole, and thus it is not necessary to use any tool to adjust the stud.
[0016] To prevent the rotation of the stud caused by wrong operations, a positioning hole is designed on the handle and at a position corresponding to the stove plate winged flange of the stove for positioning and passing the handle. After the stud is adjusted, the weight of the handle and the action of the stop portion at the top of the handle will drop the handle to the positioning hole, so as to provide a further protection measure for fixing the stud.
[0017] Compared with the prior art, the invention fixes the cover onto the stove by the fixing rack, and the fixing rack has a stop portion for fixing and removing the cover easily and conveniently and preventing damages to the cover due to insecure installations or improper removals of the cover. With the design of the screw module, adjustments can be made without requiring any tool, and the positioning hole disposed on a stove plate winged flange of the stove can prevent the stud from being loosened by wrong operations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a perspective view of the present invention;
[0019] FIG. 2 is an enlarged view of a portion of the present invention;
[0020] FIG. 3 is a perspective view of a fixing rack of the present invention;
[0021] FIG. 4 is a perspective view of a pressure plate of the present invention;
[0022] FIG. 5 is a perspective view of a screw module of the present invention;
[0023] FIG. 6 is a perspective view of a washer in accordance with a preferred embodiment of the present invention; and
[0024] FIG. 7 is a perspective view of a stud in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0025] The objective, technical measures and performance of the present invention will become apparent in the detailed description of the preferred embodiments with reference to the accompanying drawings as follows:

[0026] Referring to FIGS. 1 to 5, an oven cover fixing apparatus of the invention comprises an arc cover 10, a stove 20, a fixing rack 30, a screw module 40, and a pressure plate 50.

[0027] In FIGS. 1 and 4, the cross section of the pressure plate 50 is in a right-angled shape with a horizontal plane 51 fixed onto a stove plate winged flange 21 of the stove 20, and its vertical plane 52 is provided for fixing the fixing rack 30; and the pressure plate 50 and the winged flange 21 can be fixed by a soldering process or a common bolt-and-nut connection. The stove plate winged flange 21 has a long positioning hole 22 disposed at a position corresponding to the handle 42.

[0028] In FIGS. 1 to 3, the fixing rack 30 is substantially in a F-shape, and its internal turning corner has a flange for fixing the stop portion 31 of the cover, and the top of the fixing rack 30 has a curvature corresponding to the curvature of the arc cover 10, and the bottom of the stop portion 31 has a screw hole 32 for passing a stud 41 in the screw module 40. In the figures, four fixing racks 30 are used for fixing the four corners of the cover 10 corresponding to the stove 20.

[0029] In FIGS. 1, 2 and 4, the screw module 40 includes the stud 41, the handle 42 and a washer 43 installed to an internal side of the pressure plate and the rear portion of the stud 41 without a screw thread, and the rear portion of the stud 41 without the screw thread has a penetrating hole 411; and the handle 42 is passed through the penetrating hole 411, and the upper and lower end portions include a stop portion 421 for preventing the handle 42 from being separated from the penetrating hole 411.

[0030] In FIG. 1, the pressure plate 50 is soldered or riveted to the winged flange 21 of the stove 20, wherein three fixing rack 30 are fixed on the pressure plate 50 and at positions corresponding to three corners of the cover 10 by a common fixing method the screw module 40, and the stud 41 is passed through the screw hole 32, the vertical plane 52 of the pressure plate 50, and the washer 43 temporarily fixes the fixing rack 30 onto the pressure plate 50. When the oven is in use, the cover 10 is put into the fixing rack 30, and the cover 10 is positioned by the fixing effect of the stop portion 421. Since the fourth fixing rack 30 has a screw hole 32 slightly greater than the diameter of the stud 41, and the fixing rack 30 can be shifted horizontally sideways to a specific distance on the pressure plate 50, therefore, the cover can be fixed easily. After the cover 10 is positioned, the fourth fixing rack 30 is moved towards a corner of the cover 10 to press against the corresponding corner of the cover 10, and the handle 42 is rotated up and down and secured to the stud 41, so that the fixing rack 30 is fixed to the pressure plate 50. After the handle 42 is released, the weight of the handle 42 drops the handle 42 into the positioning hole 22 automatically.

[0031] After burning is completed, it is necessary to remove the cover 10 for washing. Users simply loosen the stud 41 and move the fourth fixing rack 30 slightly from the corner of the cover 10 to take the cover 10 away from the fixing rack 30 easily for washing. In the aforementioned operating process, the installation and removal of the cover 10 is very easy and convenient.

[0032] Referring to FIGS. 6 to 7 for embodiments of the present invention, the stud 41 of the screw module 40 is in a ladder shape with small heads and a thick middle, and its front end has a screw thread, and the middle portion has serrations 412. The middle portion of the washer 43 has a block 431 protruded from a surface of the washer to operate with the serrations 412 to prevent the stud 41 from rotating in a reverse direction. The handle 42 is passed into the screw hole 32 disposed at the front end of the stud 41, the handle 42 can be secured quickly and conveniently, and the screw bolt is loosened, so as to achieve the effect of a quick installation or removal of the cover.

[0033] While the invention has been described by means of specific embodiments, numerous modifications and variations could be made by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

What is claimed is:

1. An oven cover fixing apparatus, comprising a stove and a cover, and said cover being fixed onto said stove by a fixing rack, and the bottom of said fixing rack being fixed onto said stove, and the top of said stove having 0 can be installed retaining and limiting the position of said cover, and said cover being disposed on said stop portion and fixed to said stove.

2. The oven cover fixing apparatus of claim 1, wherein said fixing rack includes a side wing disposed on an external side of said fixing rack for preventing said cover from sliding out.

3. The oven cover fixing apparatus of claim 2, wherein said fixing rack is substantially F-shaped, and comprises a bent edge disposed at an upper portion of said fixing rack and having a shape corresponding to a portion of said cover that is fixed with said fixing rack.

4. The oven cover fixing apparatus of claim 3, wherein said fixing rack is fixed to said stove by a pressure plate having a right-angled cross section, and the horizontal plane of said
pressure plate is fixed onto said stove, and said fixing rack is fixed onto the vertical plane of said pressure plate.

5. The oven cover fixing apparatus of claim 4, wherein said fixing rack comes with a quantity of four, and said four fixing racks are fixed to positions corresponding to four corners of said cover respectively; three of said four fixing racks are fixed directly onto said stove, and the remaining one of said four fixing racks is movably coupled to said stove through a screw module.

6. The oven cover fixing apparatus of claim 4, wherein said screw module comprises a stud, a washer disposed on an internal side of the vertical plane of said pressure plate, a screw hole disposed on said fixing rack and having a diameter slightly greater than the external diameter of a screw thread on said stud, and said stud is in a tapered ladder shape having a screw thread disposed at a front end of said stud for sequentially passing through said screw hole, the vertical plane of said pressure plate, and said washer to fix said fixing rack onto said pressure plate.

7. The oven cover fixing apparatus of claim 5, wherein said screw module comprises a stud, a washer installed on an internal side of a vertical plane of said pressure plate, and a stop washer installed between said stud and said stove plate winged flange; and said fixing rack includes a screw hole having a diameter slightly greater than the external diameter of a screw thread of said stud; and said stud is in a ladder shape with small heads and a thick middle, and a front end of said stud includes a screw thread and is passed sequentially through said screw hole, the vertical plane of said pressure plate; and said washer to fix said fixing rack onto said pressure plate, and the middle of said stud has serrations; and the middle of said stop washer has a block protruded from a surface of said stop washer for preventing said stud from being rotated in a reverse direction.

8. The oven cover fixing apparatus of claim 6, wherein said stud passes through said screw hole and the vertical plane of said pressure plate, and a front-corner distal portion of said washer includes a protrusion for preventing said stud from being separated from said fixing rack.

9. The oven cover fixing apparatus of claim 7, wherein said stud passes through said screw hole and the vertical plane of said pressure plate, and a front-corner distal portion of said washer includes a protrusion for preventing said stud from being separated from said fixing rack.

10. The oven cover fixing apparatus of claim 6, wherein said stud has a penetrating hole disposed at a rear portion of said stud, and said handle is passed through said penetrating hole, and an upper end portion and a lower end portion of said handle have a stop portion for blocking and preventing said handle from being separated from said penetrating hole.

11. The oven cover fixing apparatus of claim 10, wherein said stove plate winged flange of said stove includes a positioning hole disposed at a position corresponding to the handle for passing said handle downward.