i. mounting the knuckle 10 of the upper pivot hinge 18 into a prefabricated hole on the door frame 60 mounted on the wall;

ii. prefabricating a hole on the top edge of the door 80 for the mounting of the barrel 13 of the pivot hinge assembly 100, wherein the latching pin 12 is a short distance beyond the top edge of the door 80;

iii. mounting lower pivot hinge 38 to the wall supporting the door with the L-shaped door mounting bracket 33 to the wall supporting and the disposing the knuckle 31 onto the ball support 35 such that the hinge mounting plate 32 of the lower pivot hinge 38 sits onto the horizontal plate member 34, wherein the knuckle 31 is being mounted into the lower edge of the door 80 and is rotatable about the ball support 35 upon fitting the knuckle 31 sit onto the ball support 35; wherein, when the door 80 is operated from the closed position to the open position, the upper pivot hinge 18 and lower pivot hinge 38 are simultaneously rotate about the axis of the latching pin 12 and the steel ball support 36 , thereby, operating the door 80 is actuated to a predetermined distance and enabling the operation of the door 80 in a way free from obstacle from the wall supporting the lower pivot hinge 38 and the door frame 60.

To mount the knuckle 10 on the door frame 60, a hole ~~14~~ on the door frame 60 has to be made. The latching pin 12 is adjusted in such a way that a portion thereof can be inserted within the knuckle 10. Then, the lower pivot hinge 38 is fixed onto the door frame with the L-shaped door mounting bracket 33, and horizontal plate34,to the wall supporting and the disposing the knuckle 31 onto the ball support 35 such that the horizontal plate 34 of the lower pivot hinge 32 sits onto the horizontal mounting plate 34, wherein the knuckle 31 is being mounted into the lower edge of the door 80 and is rotatable about the ball support 35 upon fitting the knuckle 31 to sit onto the ball support 35.

In accordance with the present invention, the horizontal plate 34 is off set from the vertical mounting plate 33 and thus the ball support 35 is also off set from the horizontal plate 34, such that angle of swinging of the door 80 on the pivot hinge assembly 100 opens at 90 degree without obstacle . Fastening means such as a plurality of screws are used to mount the upper pivot hinge and the lower pivot hinge onto the edge of the door frame and rough frame. The hinge plates 33, 34 of the L-shaped door mounting bracket 38 are 90 degrees to each other.

Referring to FIG. 4, there is shown a perspective view on the mounting of the upper door hinge 18 to the door 80 and door frame 60 in accordance with the present invention. In accordance with the preferred embodiment of the present invention, the fitting of the upper door hinge 18 is very convenient. A hole on the top edge of the door frame 60 is made with the size corresponding to that of the knuckle 10 and the door mounting plate 11 is secured to the door frame 11 as shown. The upper door hinge 18 is secured to the door frame ~~11~~60. The latching pin 12 within the barrel 13 is protruded to be mounted by the knuckle 10. A hole has to be fabricated on the door so as to hold the barrel 13 and is aligned with the knuckle 10. The mounting plate 15 of the barrel ~~15~~13 is screwed onto the edge of the door 80.

After the door 80 is fixed, and if it is sought to open the door 80, the door can be actuated inward or outward about the pivot hinge assembly 100 of the present invention. At this time, the rotatable moving of the door 80 is about the axis formed by the upper door hinge18 and the bottom door hinge 38. According to the present invention, the length of the latching pin 12 that is protruded is adjustable. The moving angle of the door 80 for the hinged used is about 90 degree. The door 80 with the pivot hinge assembly 100 of the present invention will stably perform the opening operation without interference, such as a collision in the door frame 60.

While the present invention has been described with reference to the particular illustrative embodiment, it is not to be restricted by the embodiment but only by the appended claims. It is to be appreciated that those skilled in the art can change or modify the embodiment without departing from the scope and spirit of the present invention. Example embodiments being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

CLAIMS

1. A pivot hinge assembly for door having a wooden door frame comprising:

i. an upper door hinge having a knuckle flush~~ed~~ with a door mounting plate and a barrel having a latching pin slidable therein, one end of the barrel being flushed with a door mounting plate; ~~wherein~~

ii. a lower door hinge including a hinge plate with a knuckle thereon, a L-shaped door mounting bracket having a vertical mounting plate and a horizontal mounting plate, wherein a ball support having a depression to hold a steel ball bearing is mounted on the L-shaped door mounting bracket and is ~~in~~ aligned with the knuckle ~~suck~~such that the knuckle is rotatable about the ball support;

wherein the barrel with the latching pin is mounted at the top corner edge of the door ~~frame~~ with the pin protruded above the edge of the door ~~frame~~, and the knuckle of the upper door hinge is disposed in opposite to but in aligned with the latching pin, the knuckle sat on the pin and the pin is rotatable about the ~~pin within the barrel~~knuckle; wherein the L-shaped door mounting bracket of the lower door hinge is mounted to the lateral wall to hold the door, and the knuckle with the hinge plate is mounted to the bottom edge of the door frame, the hinge ~~leave~~plate being rotatably about the ball bearing support on the L-shaped door bracket.

2. The pivot hinge assembly of Claim 1, wherein the lower end of the pin is provided with a plurality of teeth adapted for the engagement with a universal key.

3. The pivot hinge assembly of Claim 1 or 2, wherein the external surface of the barrel is provided with ~~a though hole~~an aperture, allowing the universal key to be inserted to adjust the length of the pin within the barrel protruded above the upper door edge.

4. The pivot hinge assembly of Claim 1, wherein the length of the pin protruded beyond the upper door edge is corresponding to the depth of the knuckle.

5. The pivot hinge assembly of Claim 1, wherein the position of the ball support of the lower door hinge is either on the center of the horizontal plate of the L-shaped door mounting bracket or at off center of the horizontal plate of the L-shaped door mounting bracket.

6. A method of installing a pivot hinge assembly onto door frame as claimed in Claim 1, comprising the steps of:

i. mounting the knuckle of the upper pivot hinge into a prefabricated hole on the ~~wall~~door frame mounted on the wall;

ii. prefabricating a hole on the top edge of the door ~~frame~~ for the mounting of the barrel of the pivot hinge assembly, wherein the latching pin is a short distance beyond the top edge of the door;

iii. mounting lower pivot hinge to the wall supporting the door with the L-shaped door mounting bracket to the wall supporting and the disposing the knuckle onto the ball support such that the hinge ~~leave~~plate of the lower pivot hinge sits onto the horizontal plate member, wherein the knuckle is being mounted into the lower edge of the door and is rotatable about the ball support upon fitting the knuckle sit onto the ball seat support; wherein, when the door is operated from the closed position to the open position, the upper pivot hinge and lower pivot hinge are simultaneously rotate about the axis of the latching pin and the steel ball support , thereby, operating the door is actuated to a predetermined distance and enabling the operation of the door in a way free from obstacle from the wall supporting the lower pivot hinge and the door frame.

7. The method of installing as set forth in Claim 6, wherein the ball bearing support being mounted onto the horizontal plate is off set towards one edge of the horizontal plate, such that the angle of swinging of the door on the pivot hinge assembly opens at 90 degree without obstacle.

8. The method of installing as set forth in Claim 6, wherein the length of latching pin protruded beyond the upper door edge is corresponding to the depth of the knuckle.

9. The method of installing as set forth in Claim 8, wherein the adjustment of the length of the latching pin is done by using a universal key to rotate either clockwise or anticlockwise to slide the latching pin within the barrel.

10. The method of installing a pivotal hinge assembly as set forth in Claim 1, wherein the knuckle of the upper hinge is aligned capped onto the latching pin protruded from the barrel.

11. The pivot hinge assembly as set forth in Claim 1, wherein the lathing pin is smoothly slidable within the barrel.

12. The pivot hinge assembly as claimed in Claim 1, further comprising a fastening means to mount the upper hinge and the lower pivot hinge onto the edge of the door frame.

13. The pivot hinge assembly as claimed in Claim 12, wherein the fastening means is a plurality of screws ~~mounting~~which are used to mount the hinge plate to the edge of the door frame.

14. The pivot hinge assembly as claimed in Claim 1, wherein the hinge plates of the L-shaped door mounting brackets are 90 degrees to each other.

15. The pivot hinge assembly as claimed in Claim 1, wherein the horizontal mounting plate of the L-shaped door brackets is offset from the vertical mounting plate of the L-shaped door bracket such that the axis of the vertical mounting plate is not in alignment with that of the horizontal mounting plate.