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G. G. FULTON

1,998,049

CHAIR RUNG FASTENER

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Fig. 1.

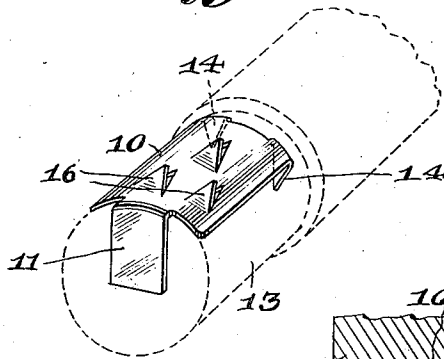


Fig. 2.

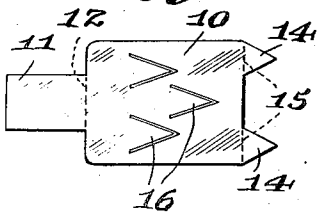


Fig. 3.

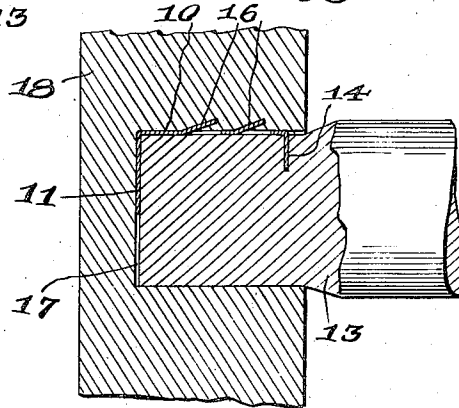


Fig. 4.

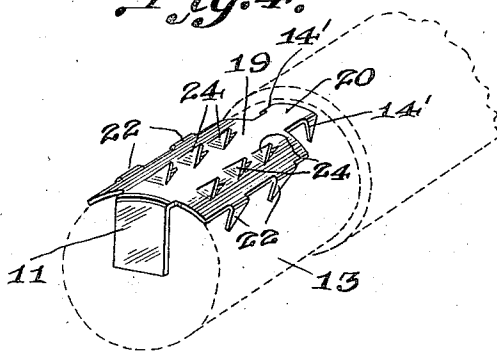
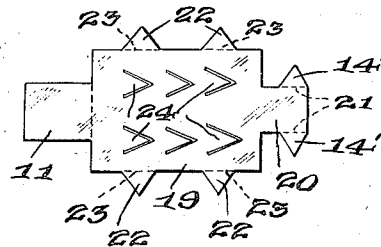


Fig. 5.



Inventor

Gladys Grayson Fulton

By *Emil F. Lange,*
Attorney

UNITED STATES PATENT OFFICE

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CHAIR RUNG FASTENER

Gladys Grayson Fulton, Brooklyn, N. Y.

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3 Claims. (Cl. 20—92)

The present invention relates to fastening devices adapted to hold rungs in chair frames and for other similar uses where there is a tenon and mortise joint.

5 The ends of rungs in chair and like frames dry out and shrink and break loose from the adhesive or other fastening means employed in holding the chair frame together. This condition not only frees the end of the rung so that
10 the frame of the chair may spread, but also provides a loose play between the end of the rung and its recess or socket.

It is the purpose of the present invention to provide a fastener which will not only hold
15 the end of the rung in the socket but will also take up the space or free play so that the parts will be securely and firmly held together to reinforce and strengthen the chair frame and hold the parts from rocking or pivoting one
20 upon the other.

In carrying out these purposes of the present invention it is another object to provide a simply and economically constructed device which may be readily fitted in position without the ex-
25 ercise of expert knowledge in mechanics, carpentry or the like and which will effectively hold the parts together and at the same time provide a fastener which may be cut or stamped from a single sheet metal blank.

30 With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

35 In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a perspective view of a chair rung fastener constructed according to the present invention, the dotted lines showing the appli-
40 cation of the fastener to the end of the rung.

Figure 2 is a plan view of the blank from which the fastener is formed.

45 Figure 3 is an enlarged cross sectional view taken through a portion of a chair frame showing the end of a rung secured in the recess or mortise by means of the fastener of this invention.

50 Figure 4 is a perspective view of a modified form of the fastener, the dotted lines showing the same applied to the end of a rung, and

Figure 5 is a plan view of the blank from which the modified form of the fastener is made.

Referring now to the drawing, and first to Figure 2, 10 designates a sheet metal blank of suitable thickness and resiliency to carry out the

objects of the invention. The sheet metal blank 10 is substantially rectangular in contour and provided at one end with a longitudinally extending tongue 11 of less width than the plate 10 and which lies intermediate the lateral edges of the
5 plate or blank. This tongue 11 is adapted to be folded downwardly on the line 12 so as to bear against the free extremity of a rung 13, as shown in Figures 1 and 3. If desired the lateral portions of the blank or plate 10 may be rounded or
10 curved to conform generally to the tenon or reduced rounded end of the rung 13. The other end of the blank 10 is provided at its outer corners with lengthwise extending prongs 14 adapted to be bent downwardly on lines 15 for penetrating
15 the outer surface of the rung 13, as shown in Figures 1 and 3, to lock the plate 10 against shifting movements and with the tongue 11 against the end of the rung.

The blank 10 is provided with outwardly projecting prongs 16 which are suitably cut or stamped from the body portion of the blank and are preferably disposed in offset relation relatively to one another.

25 These prongs 16 are directed with their points toward the outer end of the blank which carries the prongs 14, and the prongs 16 are sprung outwardly at a suitable angle so as to engage the inner wall of the mortise or socket 17 in the leg
30 of a chair or the like to admit of the forcing inwardly of the fastening device with the end of the rung. The prongs 16 flex downwardly as the fastener device is forced into the socket 17 but the inherent resiliency and stiffness of the prongs 16
35 is such that the prongs spring outwardly and engage in the inner wall of the socket 17 to hold the fastening device from removal therefrom.

40 Of course the fasteners may be manufactured and sold in flat form as shown in Figure 2 and the prongs 14 and the tongue 11 may be subsequently bent to shape. However, in order to sell a finished article immediately ready for applica-
45 tion the manufacturer may turn down the prongs 14 and the tongue 11 and sell the articles in such form.

50 It will be noticed that the prongs 14 and the prongs 16 are all disposed out of longitudinal alignment with one another so that there is little or no chance of grooving the walls of either the rung 13 or the sockets 17 and the gripping action
55 will take place at a number of different points simultaneously and the indenture formed by one prong will not weaken the gripping action of another.

In the modification shown in Figures 4 and 5,

the blank plate 19 has the tongue 11 at one end and is provided with the prongs 14' which are carried upon a narrow neck portion 20 extending from the outer end of the blank opposite the tongue 11. The prongs 14' are disposed at the opposite edges of the neck 20 and are adapted to be bent downwardly on the dotted lines 21 for biting engagement in the outer surface of the rungs 13, as shown in Figure 4. The plate 19 is also provided along its lateral edge portions with spaced prongs 22 adapted to be turned downwardly on the dotted lines 23 to engage in the outer side of the rung 13 in position out of line with the down-turned prongs 14'. The modified blank 11 is also provided with a plurality of wall engaging prongs 24 which are struck from the intermediate portion of the plate or blank 19 and bent outwardly at a suitable angle and directed toward the neck 20 so that the fastening device may slide into the opening 17 when placed on the end of the rung but will be locked in the opening by engagement of the outwardly sprung prongs 24 with the side wall of the opening 17.

In both instances, the tongue 11 is of greater length than the prongs 14, or 14', the result being that the fastening device may be disposed at the side of the rung 13 with the down-turned tongue 11 engaging the end of the rung and acting as a guide determining the proper position of the fastening device against the side of the rung. As the fastening device is moved against the side of the rung, the tongue 11 slides against the end of the rung and maintains the fastening device in proper position for engagement of the prongs 14, or 14' in the outer surface of the rung. This insures that the fastening device is secured rigidly to the rung as the tongue 11 forms an abutment at one end and the down-turned prongs 14 an abutment at the other end. The rung is now forced into the socket or mortise 17 and the outwardly sprung prongs 16, or 24, slide freely over the inner wall of the socket 17 but with sufficient tension to spring the points of the prongs out into the wall to prevent any outward movement of the device when subjected to a pulling action.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims:—

What is claimed is:—

1. A chair rung fastener comprising a sheet metal blank having a tongue of reduced width at one end bent at substantially right angles from the blank to engage against the end of a rung and determine the position of the blank against the side of a rung, said sheet metal blank having at its opposite end a reduced neck having down-turned prongs at its lateral edges for engagement in the side of the rung, said metal blank also having at its longitudinal edges down-turned anchoring prongs for engagement in the side of the rung and disposed out of line with said first prongs, and said plate further having a plurality of body prongs sprung outwardly from the intermediate portion of the plate and spaced apart for engagement against the inner wall of a rung opening to lock the fastener therein.

2. A chair rung fastener comprising a body blank having a guide and positioning tongue at one end turned at right angles to the blank for engagement against the end of a rung, said blank having spaced prongs projecting from its other end and turned in the direction of said tongue for biting engagement in the side of a rung, said blank also having a plurality of outwardly sprung prongs with their bases transverse to the blank and their free ends directed toward said other end of the blank for easy sliding engagement with the wall of a rung socket during insertion of a rung and fastener into the socket, said outwardly sprung prongs adapted to bind in the wall of the socket for locking the device with the rung therein.

3. A chair rung fastener comprising a plate having a tongue stamped from one end thereof, a plurality of outwardly sprung prongs stamped from the intermediate portion of the plate, and a pair of end prongs stamped from the opposite corners of the plate remote from said tongue, said corner prongs and said tongue extending at substantially right angles to the plate for engagement respectively against the end and into the side of a rung, said tongue adapted to guide the plate in position during the penetration of the prongs in the side of the rung, said intermediate prongs having their bases transverse to the plate and having their longitudinal axes lengthwise of the plate with the free ends of the prongs directed backwardly from the end of the plate having the tongue for easy sliding movement into a rung socket and for interlocking engagement with the wall of the socket.

GLADYS GRAYSON FULTON.