Feb. 23, 1943. H. W. NEUNHERZ 2,312,185

HARDWARE

Filed Dec. 24, 1940

Fig. 1.

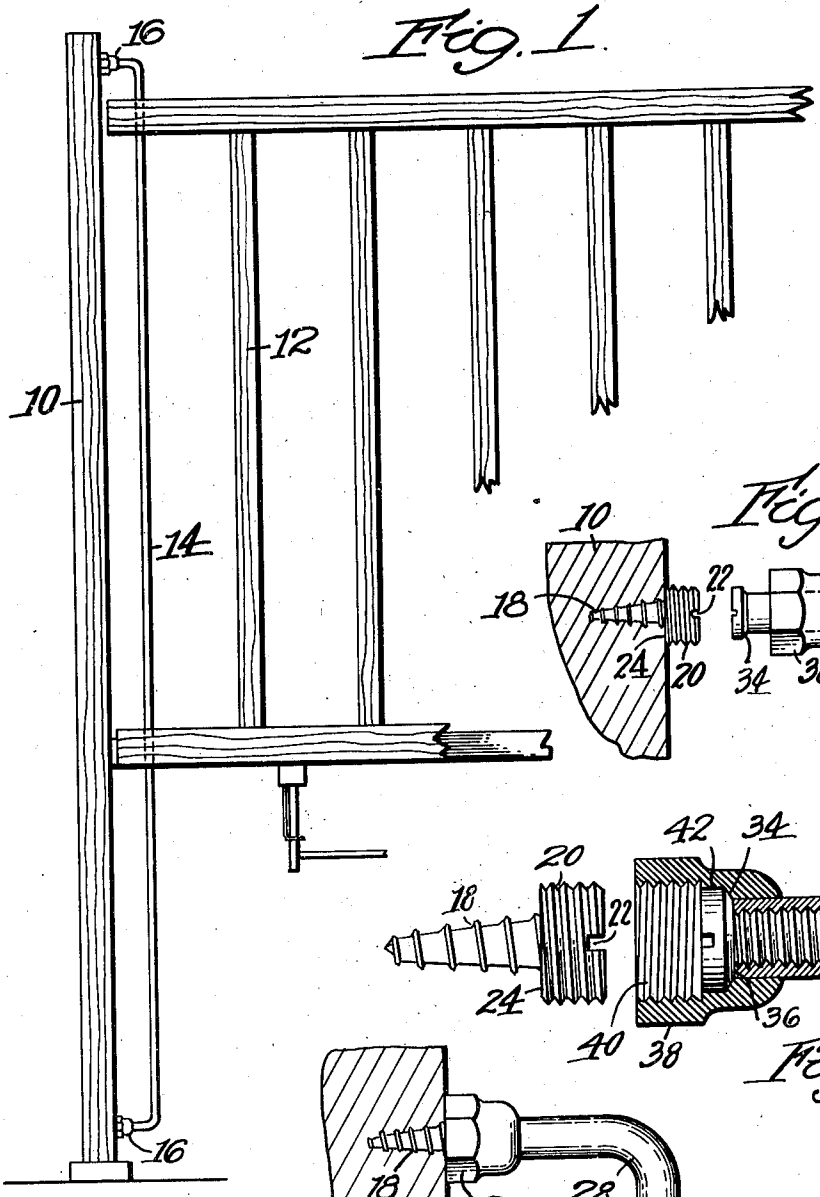


Fig. 2.

Fig. 4

Fig. 3.

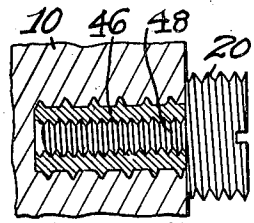


Fig. 5.

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Patented Feb. 23, 1943

2,312,185

UNITED STATES PATENT OFFICE

2,312,185

HARDWARE

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Application December 24, 1940, Serial No. 371,556

3 Claims. (Cl. 287—20)

This invention relates to metal hardware and more particularly to fittings for the purpose of securing rods or like articles to a support.

Metal hardware applied to wooden elements, corners, and furniture in general, has the objection that parts of the hardware or fittings project through the furniture and otherwise present rough edges that have an unsightly appearance and may scratch or tear objects coming in contact therewith. This defect is especially objectionable in infants' cribs where any rough edges or corners of metal parts, such as screws, bolts, bushings, etc., mar the appearance of the crib and are very apt to scratch or cut the infant occupant of the crib as he moves about and attempts to climb up the sides of the crib in order to play or assist himself in standing; and also persons leaning over the sides of the crib to care for the infant are liable to be scratched, etc., by sharp edges and corners of the hardware.

Objects of this invention include the provision of means to obviate the above stated objections in metal hardware especially for infants' cribs; the provision of a fitting for the purpose described having no projecting rough parts or edges; the provision of a fitting which completely avoids any use of an application member extending all the way through its support but which still rigidly and securely holds its supported member to its base; the provision of metal hardware comprising a fitting employing an embedded screw threaded member extending beyond the surface of a support, a rod having a headed screw threaded into the end thereof, and an acorn nut firmly securing together the threaded member and the head of the screw threaded into the rod, this construction thereby firmly anchoring the rod to the original screw threaded member but concealing the securing means thereof; and the provision of metal hardware comprising a fitting for the support of a rod or other article to a base, said fitting being oranmental in appearance, simple in application, economical in manufacture, and having no projections or rough edges to mar or scratch objects coming in contact therewith.

Other objects and advantages of the invention appear hereinafter.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a view in elevation showing the application of the present invention to the guide rod for the drop side of an infant's crib;

Fig. 2 is an elevation of the fititng in unassembled relation;

Fig. 3 is an elevation of the parts in assembled relation; and

Fig. 4 is an enlarged view of the parts of this invention, parts being in cross section;

Fig. 5 shows a modified form of the hanger bolt.

The fitting comprising the present invention may be used in any relation where desired or convenient but is disclosed in the present instance as forming a hanger for the support of the usual vertical guide for the drop side of an infant's crib.

Referring to Fig. 1, there is shown a vertical end post 10 of a child's crib and the usual drop side 12 and vertical guide rod 14 therefor. The guide rod 14 is supported at its upper end by the hanger or fitting generally indicated at 16 which is the subject matter of the present invention. This fitting may, if desired, be duplicated at the lower end of the guide rod 14, as shown in Fig. 1, although any other desired or convenient means may be employed to anchor the lower end of the rod 14 since only the upper end of the rod is located at a point where the occupant of the crib might be easily injured by the projecting ends or sharp edges of the ordinary guide hanger.

The hanger or fitting indicated generally at 16 is secured to the post or other support 10 by means of a combination hanger bolt having wood screw threads 18 for securement to the post or support 10 and machine screw threads 20 substantially greater in diameter than the wood screw threads 18. At the end of the machine screw threads 20, there is a screw driving slot 22 by which the combination fitting may be applied to the support 10. As applied to the base 10, Fig. 2, the wood screw threads 18 are entered wholly within the support, and the machine screw threads 20 are left extending from the support, there being a shoulder 24 at the end of the machine screw threads opposite to the screw driving slot 22 which abuts against the support 10 and accurately locates the bolt with respect to the same.

In the present instance, the rod 14 to be supported by the fitting 16 is bent to form a right angle turn 28 and the turned end is drilled and tapped as at 30 to accurately receive a headed machine screw 32 which has an accurtely beveled seat portion 34 and a shoulder 36, the latter abutting the end of the rod, as shown in Fig. 4.

In order to firmly secure the combination hanger bolt and the rod together, there is employed an acorn nut 38 which has an aperture

therethrough by which it is freely slidable on the rod 14. This nut is internally threaded as at 40 correspondingly to the machine screw threads 20 on the combination hanger bolt and also the interior of the acorn nut is machined as at 42 to closely fit the periphery of the head of the machine screw 32 and also to accurately fit and seat on the beveled seat portion 34. The nut 38 may be of any shape or design desired, to accomplish the function stated.

A modified form of hanger bolt is shown in Fig. 5, wherein an exteriorly threaded bushing 46 is screwed into a bore in post 10, and instead of wood screw threads 18, the hanger bolt may have machine screw threads 48.

To assemble this device, it is necessary merely to screw the hanger bolt into the support 10 at the desired location, thus leaving the machine screw threads 20 exposed. This of course leaves the wood screw part 18 completely concealed. The acorn nut 38 is then slipped on over the end of the rod 14, and the screw 32 is turned into the threads 30 in the rod, until the screw is securely seated with its shoulder 36 abutting the end of the rod. This leaves the bevel 34 exposed and ready to seat the corresponding bevel in the acorn nut. The flat head of the screw 32 is then placed flush on and against the flat head of the hanger bolt and the acorn nut is slipped along the rod towards the threads 20, where it is screwed onto the latter.

It will be seen that the acorn nut completely surrounds and conceals the machine screw 20 and even if the threads 40 extended for a slightly greater distance than the threads 20, the free end of the acorn nut would enter the wood of the support 10 to a slight degree. In any case, due to the bevel 34, the head of the machine screw 32 is forced tightly into contact with the screw 20 and the more pressure applied to the acorn nut the more firmly the flat ends of the screws 20 and 32 engage each other. When the acorn nut is screwed into final position, the appearance of the device will be as in Fig. 3 wherein it is shown that the structure presents a smooth appearance and there are no projecting parts or rough edges of the fitting which could possibly injure anything coming in contact with the same and that all anchoring or securing parts of the fitting are completely concealed from view. Also, the assembly as described precludes any tendency to twisting or loosening from its anchorage, the cooperating bevels in the acorn nut and the head of screw 32 providing for a clamping wedge action to securely bind the parts together.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a device of the class described, a fitting comprising a bolt having a portion adapted to be secured to a support, said bolt having another portion thereof adapted to extend out from said support, said extending portion having a substantially flat, continuous free end surface, and screw threads on said second named portion, a rod to be secured to said bolt and therefore to said support, a removable flat-headed screw at an end of said rod, a hollow acorn nut adapted to slide on said rod and being removable therefrom or slidable onto the same upon removal of the screw, the latter being adapted to be replaced and its head forming a stop for the acorn nut when said screw is on the rod, threads in the acorn nut adapted to cooperate with those on the bolt, said threads being constructed and arranged to draw the head of the screw up into firm wedging contact with the flat surface of the bolt to form a rigid fastening for the rod to the support.

2. In a device of the class described, a hanger for a rod having a bend adjacent an end thereof, said rod being adapted to be secured to a support at said end, a bolt having a portion for securement to said support and a threaded portion adapted to extend out from said support, a tapped hole in said rod end, a screw having a head of a diameter larger than said rod detachably threaded into said hole, an acorn nut adapted to be slidable on said rod by removing the screw, inserting the rod end in the nut, and replacing the screw, said acorn nut having threads for cooperation with said bolt threaded portion, the length of threaded area of said bolt and nut being substantially equal, said screw forming a stop for said acorn nut, whereby said acorn nut is effective to draw said screw head into wedged engagement with said bolt, and cooperating inclined wedging cam surfaces on the interior of the acorn nut and the under side of the screw.

3. A device as recited in claim 1 wherein the extending end of the bolt is enlarged and is provided with a flat surface adapted to abut the support to locate the bolt.

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