

United States Patent

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[54] **STOOL OR LEG REST**
 1 Claim, 4 Drawing Figs.

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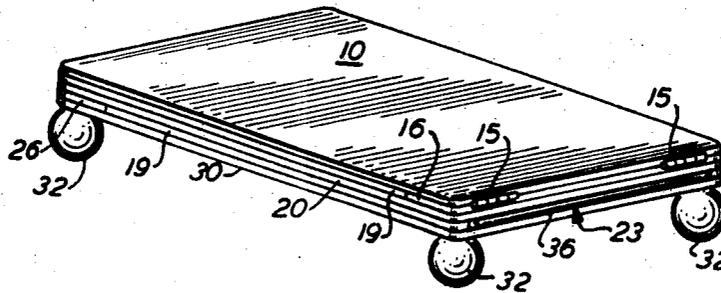
[51] Int. Cl. **A47c 7/50**

[50] Field of Search **108/1-10;**
 248/396; 297/423, 428, 438, 439, 437

[56] **References Cited**
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789,813	5/1905	Longley.....	248/396

ABSTRACT: A stool or leg rest widely adjustable as to height and angle having but few simplified basic parts, i.e. 3 similar ¼-inch plywood platens coinciding when adjacent, their ends interjoined by hinges, two sets of plywood diecut and inwardly directed ratchet teeth made integral with the upper side of two platens to coincide with the longer edges thereof and two U-pawls nested intermediate of said ratchets when platens are adjacent, journaled on the undersides of two of the platens facing the ratchets, and gravity responsive when the leg rest is being Z-extended.



STOOL OR LEG REST

REFERENCE IN ART

U.S. Pat. No. 789,813, J. H. Langley, issued 1905; U.S. Pat. No. 2,579,577, G. E. Hill, issued 1951.

BACKGROUND OF INVENTION

Obviously the structure of U.S. Pat. No. 789,813, was too complex to be practical from a production cost and use standpoint, because although 62 years have elapsed nothing like it has successfully made the market. It's made of three members but each member is made of many parts, some steel and some wood and no member is a simple platen but is a complicated frame around a central void. Its four ratchets are separate from the members and individually movable relative to the members. The capacity for elevation is only 100 percent based on the collapsed height, due to the limitations of the separate ratchet construction and control. It could not be raised from a height low enough to stow under a conventional upholstered chair to a height equivalent to the seat height and thereafter provide either an up or downward slant. A foot stool such as U.S. Pat. No. 2,579,577 within the limits of its box base 10 does not appear as through it could be raised very high without the ends of the pentagraph being raised beyond the limit of guide 26 and if it were made to do so the leverage resulting would make it unable to withstand the strains of use.

SUMMARY OF INVENTION

While recognition of the "need" may be the first step of invention, a solution of that need is useless if it is conceived in such complex terms that it is impractical to make and impossible to sell, especially when the item is something for the home for which there are already many alternatives.

An example of true invention is the printed circuit. While I do not claim such perfection of simplification, I have created the ultimate in simplification for a height and angle adjustable foot stool which within reasonable platen dimensions such as 17 inches the leg rest can be raised from 4 to 19½ inches plus padding, almost five times its original height.

Basically I have reduced such a structure to three platens of ¼-inch plywood 13-inches × 17-inches with ratchets diecut from the same material and made integral with two of the platens by pneumatically stapling them thereupon. The size and shape of the platens are identical and they are hinged together. The only parts movable relative to the platens are two U-shaped one-piece wire pawls.

When collapsed, the platens coincide with the integral ratchets and have the appearance of five stacked plywood platens with their rounded sanded edges coinciding on three sides and the brass-plated pawls lining up with the fourth side in two instances.

This simple novel arrangement provides minimum compactness, simplicity of construction, assembly and fingertip operation, also minimum costs as will be clearly seen from the following description of operation, assembly, specification, claims and drawings in which:

FIG. 1 is a perspective view of my stool when lowered,

FIG. 2 is a side elevation of my stool partially elevated or extended for use as a leg rest,

FIG. 3 is a plan view of the stool assembly viewed from the right of FIG. 2, but stretched out to show the simplicity of construction and assembly, and

FIG. 4 is a view similar to FIG. 3 but taken from the left of FIG. 2.

As shown in the drawings, my simple extendable stool and leg rest has only three basic ¼-inch plywood members 10, 20 and 30, each hinged to the adjacent member by two identical hinges 15 and 25, so that when the stool is fully lowered said three similar members stack one above the other. Hinges 15 and 25 are of a specialized variety self-cleating under a press into the plywood. For best assembly, the hinge is cleated between platen member 10 and a narrow strip of 16, and member 20 to strip 26 respectively. Two pairs of ratchet strips

21 and 21', and 31 and 31' diecut from ¼-inch plywood with inwardly directed ratched teeth 17 with supporting angle 18 and with the straight outer edge 19 of said strips positioned to correspond with the long edges and sides of platens 20 and 30 respectively extending from the side of each end of strips 16 and 26 and mounted integrally to platens 20 and 30 respectively by pneumatic stapling or adhesion. Journaled in two identical pairs of extruded plastic parts 12 and 22 positioned intermediate of the short ends of the undersides of platens 10 and 20 respectively (as viewed in FIG. 2) are identical U-pawls 13 and 23 respectively to engage and disengage from said inwardly directed ratchet teeth 17 of said diecut ratchets 21 and 21', and 31 and 31' respectively. Pawls 13 and 23 are shaped so that when my stool is in its lowest position said pawls will nest in the ¼-inch space between strip 16 and ratchets 21 and 21' or strip 26 and ratchets 31 and 31' respectively. The squared off bottom 36 of U-pawls 13 and 23 will line up with and between the open short ends of platens 10 and 20, and 20 and 30 respectively substantially closing said ¼-inch opening ornamentally since the U is preferably made of a single piece of 3/16-inch brass-plated steel wire as shown in FIGS. 1, 3 and 4. The U-pawls are one piece of bent 3/16-inch wire including the upper and journaled inward bend 37, straight parallel sections 38 normal thereto, outward angle 45° section 45 and short radius curved ends connecting 38 with 36. Four ball feet 32 have flats on one side for better attachment to the corners of platen 30. As shown in FIG. 1 after the ratchet parts are integrally attached to platen members, the appearance of my closed stool is like five ¼-inch identical platens each with sanded edges and corners aligned one above the other, supported by four ball feet 32, 2-inches in diameter.

OPERATION

With these simple parts of little weight and U-pawls acting under gravity, platen 10 and/or 20 can be raised with a fingertip. Since in the position shown in FIG. 2 U-pawl 23 contacts ratchet 21 and 21' in an intermediate position, platen 10 can still be inclined either up or downward by shifting pawls to engage other ratchet teeth. Likewise by further angling platen 20 so that pawl 23 will be more vertical, platen 10 can be either further angled or raised considerably higher. To lower platen 10 and/or 20 the pawls 13 and 23 may be released by hand. Since the pawls are one piece "U's" they may be released directly and repositioned from either side of the leg rest without any complicated release mechanism.

ASSEMBLY

To further emphasize the simplicity of my three-platen construction, consider the simplicity of assembly as an illustration i.e. the few parts, their similarity for quantity production, the minimum premachining of the parts and the ease of jiggling. Four balls 32 are positioned in a jig. Platen 30 is placed above them. Platen 20 with strip 26 previously hinged together are positioned by the jig on the end of platen 30 and ratchet strips 31 and 31' are lined up by the jig between strip 26 and the other end of platen 30. Plastic parts 22 complete with U-pawl 23 and jig located, or optionally positioned by aligning the flat bottom of the "U" with the end of platen 30 with the sides of the "U" just inside the points of the ratched teeth. Then the balls are pneumatically stapled with long staples that pass through strips 26 and the corners of platen 30. A few additional short staples make strips 21 and ratchets 31 and 31' integral with platen 30. Also plastic journal parts 22 are stapled to platen 20.

This subassembly is turned over into another parallel jig where platen 10 with prehung strip 16 is positioned on top of the end of platen 20 as shown in FIG. 4. Ratchet-strips 21 and 21' are positioned and likewise plastic journals 12 and U-pawl 13 and these parts affixed and made integral with the platens as previously described.

In actual practice both parallel jigs would both be full so stapling would be done in both jigs at the same time with a

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minimum handling of pneumatic stapling tools and plywood parts. When one remembers that U-pawls 13 and 23 also plastic parts 12 and 22 and prehinged platens 20 and 30 are identical, this description of the jiggling and stapling illustrates the further advantage, speed of manufacture and simplicity resulting from my new and unique triple platen construction.

Without departing from the scope of my invention it is also practical in quantity production to make all or any platen 10, 20 and 30 out of a platen of sheet metal forming integrally therein ratchets 17 and 18, also forming hinges 15 and 25, also forming journals 37 therein eliminating 16 and 29. Extruded ribs could be formed extending from the underside of said platens to provide greater strength with thinner metal.

I claim:

1. A collapsible stool and leg rest adjustable as to height and angle comprising a top member, an intermediate member and a base member, each member being formed of a solid planar

sheet of rigid material, said top member being hingedly secured to one end of said intermediate member, said base member being hingedly secured to the other end of said intermediate member, ratchet means extending along the unsecured edges on one surface of said intermediate member, first U-shaped pawl means pivotally connected to a surface of said top member and adapted to engage selectively the ratchet means on said intermediate member, further ratchet means extending along the unsecured edges on one surface of said base member, second U-shaped pawl means pivotally connected to the intermediate member on the surface opposite that which contains the ratchet means, said second U-shaped pawl means adapted to engage selectively the ratchet means on said base member, said ratchet means being of such height and being positioned so as to envelop said pawl means when said stool is in collapsed condition, and legs on said base member.

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