Sept. 6, 1966 S. T. SHEARS 3,270,995

SHELF SUPPORT

Filed Nov. 26, 1965

Fig. 1.

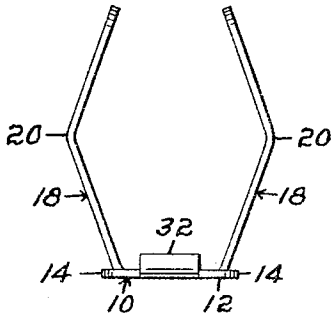


Fig. 2.

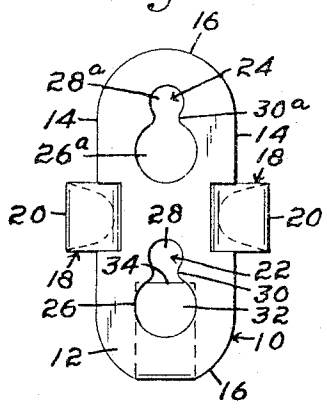
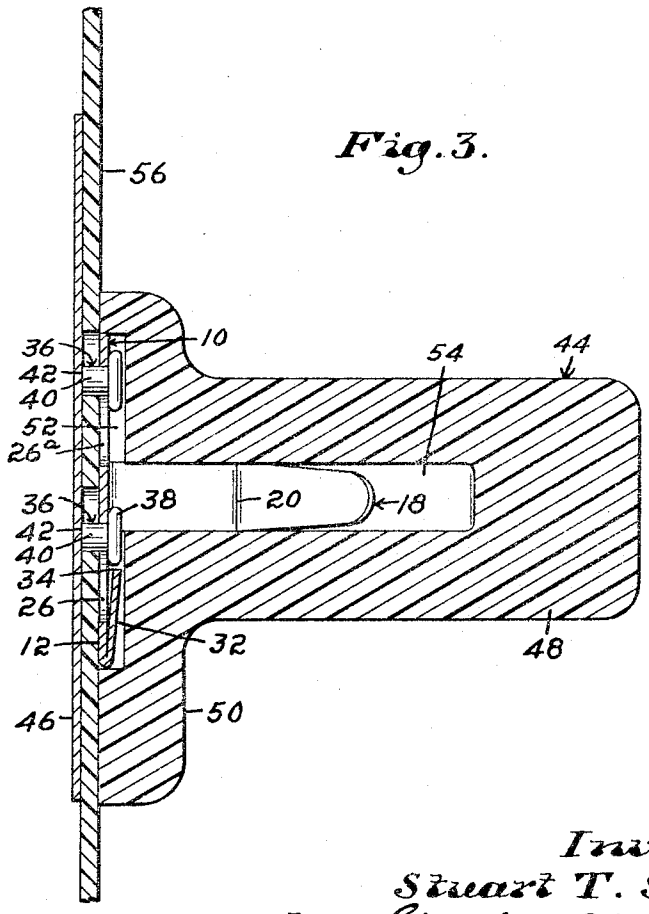


Fig. 3.



Inventor:
Stuart T. Shears,
by Gordon Hendleman
Atty.

United States Patent Office 3,270,995 Patented Sept. 6, 1966

3,270,995

SHELF SUPPORT

Stuart T. Shears, Belmont, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Nov. 26, 1965, Ser. No. 509,732
2 Claims. (Cl. 248—224)

This invention relates generally to fastening devices and more specifically to a fastening device utilizing a stud and an adapter or socket.

An object of the present invention is to provide a fastening device having a stud, welded or otherwise attached to a support without the necessity of forming an aperture in the support and an adapter element having means of engaging with an article to be held by using a pair of spaced slots for engaging the studs.

Another object of the present invention is to provide a fastening device engaged to a support and an adapter element including a pair of slots spaced from each other, having an arm extending from each side edge of the adapter element.

Other objects of the invention will, in part, be obvious and will, in part, appear hereinafter.

In the drawings:

FIG. 1 is an end elevation of the adapter;

FIG. 2 is a bottom plan view of the adapter shown in FIG. 1; and

FIG. 3 is a side elevation showing the adapter engaged to a pair of studs on a support and engaged within the cavity of a shelf support element.

There is shown in the drawings an adapter socket element **10** formed of a flat, thin stock, having a base portion **12** including a pair of spaced parallel side edges **14** and a pair of arc end edges **16**. In close proximity to each of the side edges **16** an arm **18** is formed, extending away from the base portion **12**. Each of the arms **18** has a terminal end bent toward the other to provide a knuckle **20**. A first slot **22** and a second slot **24** are formed through the base portion **12**, spaced from each other. Each of the slots **22, 24** include a large, substantially circular opening **26, 26***a* and a smaller, substantially circular opening **28, 28***a* respectively connected by a necked channel **30, 30***a*. The slots **22, 24** lie on the long longitudinal axis of the base portion **12** with their small openings **28, 28***a* on the same side of their respective large openings **26, 26***a* as shown in FIG. 2. A locking tab **32** extends from one of the arced end edges **16** and is bent back to extend partially over the larger opening **26** of the first slot **22**. The locking tab **32** has a free engagement edge **34** directed along a plane parallel to the plane of the base.

The pair of studs **36**, to be used with the adapter element **10**, each comprise an enlarged head portion **38** and a cylindrical shank portion **40** extending, in right angle relationship, from the enlarged head portion **38**. The shank portion **40** is of smaller diameter than the head portion **38** and has a free terminal end **42**.

The shelf support element **44** is normally used to hold a shelf by placing one on each of a pair of spaced parallel side walls **46**, of the interior of a refrigerator for example. The shelf support element **44** comprises a body portion **48**, frequently formed of plastic material, extending from a base **50** having a greater width than the body portion **48**. The base **50** has a shallowed depression **52** which opens into a comparatively deep cavity **54**. The cavity **54** extends through the remaining portion of the base **50** and well into the body portion **48** as shown in FIG. 3.

The studs **36** are either soldered or otherwise attached to the side wall **46** without forming an aperture through the side wall **46**. The two studs **36** are placed in spaced,

aligned relationship and a plastic liner **56** is placed in abutting relationship to the side wall **46** and has holes formed therein through which the two studs **36** may pass.

The diameter or width of the adapter socket element **10** at its knuckles **20** is greater than the width of the cavity **54** and therefore when the arms **18** are pushed into the cavity **54** they are flexed inwardly and thereby hold themselves in engagement with the shelf support element **44**. The socket adapter element **10** is usually engaged to the aligned studs **36** prior to its engagement with the shelf support element **44**. Engagement of the adapter socket element **10** with the studs **36** is accomplished by passing the head portions **38**, which are smaller diameter than the large openings **26, 26***a*, through the large openings **26, 26***a*. In order to pass the stud **36** through the opening **26**, the locking tab **32** is flexed away from the base portion **12** by the head portion **38**. The base portion **12** is then pushed to pass the shanks **40** through their respective necked channels **30** and **30***a* until the shanks **40** come to rest within the small openings **28, 28***a* of the slots **22, 24**. The stud **36** engaged within the slot **22** as it is passed into the small opening **28** is passed beyond the engagement edge **34** of the locking tab **32**, allowing the locking tab **32** to snap back behind the head portion **38**, locking the adapter socket element **10** to the studs **36**. The shelf support element **44** can then be engaged with the adapter socket element **10**.

With reference to the foregoing description it is to be understood that what has been disclosed therein represents only a single embodiment of the invention and is to be construed as illustrative rather than restrictive in nature; and that the invention is best described by the following claims.

What is claimed:

1. The combination of a fastening device and a support, said fastening device comprising a pair of studs and an adapter socket element, said adapter element socket having a base portion, a first and second slot formed through said base portion, said slots being spaced from each other along a long axis of said base portion, each of said slots comprising a large opening and a small opening connected by a necked channel, a locking tab extending from an edge of said base portion, over the area defined by said large opening of said first slot, said locking tab having a free engagement edge and lying on a plane in substantially parallel relation with said base portion, each of said studs having a head portion and a shank portion extending from said head portion in integral right angle therewith, said shank having a free end, each of said studs being secured at said free end of said shank to said support without perforation of said support, said large opening of said slots having a diameter greater than said head portion of said stud and said head portion being in abutting superposed relation to said base adjacent said small opening and said free engagement end of said locking tab being in approximate relation to said head portion of the stud engaged with said first slot and said fastening device having means of engaging an article to be held.

2. The combination of a fastening device and a support as set forth in claim **1** wherein said means of engaging an article to be held comprises a pair of spaced legs extending from said base portion.

References Cited by the Examiner

UNITED STATES PATENTS

2,053,119 9/1936 Sturtevant ---------- 248—223

CLAUDE A. LE ROY, *Primary Examiner.*