June 5, 1934. J. H. KNAPP 1,961,935

SHELF SUPPORT

Filed June 2, 1932

Fig. 1

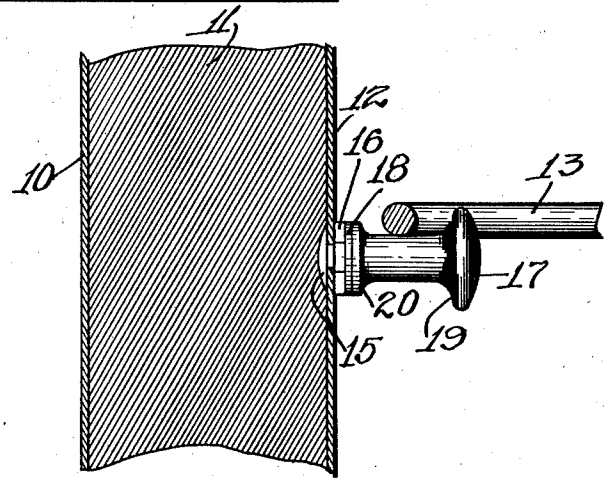


Fig. 2

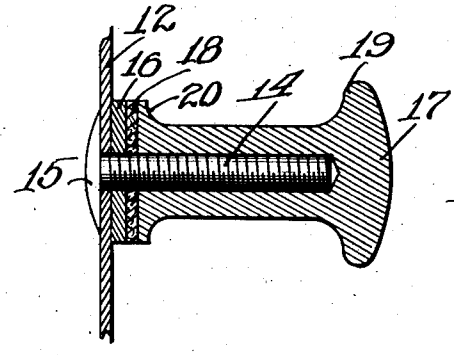
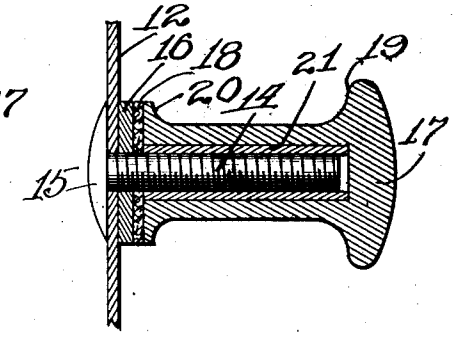


Fig. 3



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SHELF SUPPORT

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1 Claim. (Cl. 248—18)

This invention relates to an improved shelf support for sliding shelves as used in refrigerators and other storage cabinets.

It is an object of this invention to provide an improved shelf support molded from a non-resonant material sufficiently hard in its completed form to resist wear due to the sliding shelf. The use of a non-resonant material is especially advantageous in the case of insulated cabinets wherein an inner metal lining is used since the shelf support may then be mounted directly on the lining without setting up undesirable vibrations therein upon movement of the shelf, since the lining is apt to be such a large plane surface as to act as a sounding board for initially slight vibrations in the case of metal to metal contact between the shelf and its support. An example of a suitable material is a phenol condensation product molded under heat and pressure as the resulting support is sufficiently hard for service and is non-resonant and impervious to liquids.

It is a further object of this invention to provide an improved shelf support for sliding shelves, the support being mounted directly on the cabinet lining without the need of special backing or other support therefor, the support being formed with spaced shoulders defining a guideway for sliding shelves of the wire grid type.

It is another object of this invention to provide an improved and simplified shelf support that can be economically manufactured and installed.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

This invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is a fragmentary section through the wall of a refrigerator showing the shelf support of this invention in elevation.

Figure 2 is a longitudinal section through a shelf support embodying the features of this invention.

Figure 3 is a similar section through a modified form of shelf support.

As shown on the drawing:

The shelf support of this invention is shown in connection with a refrigerator comprising an outer casing 10 having insulating material 11 interposed between the casing and the compartment lining 12. The lining is usually porcelain enameled steel which forms a desirable finish but renders the support of shelves 13 a difficult problem. The preferred form of shelving 13 comprises a parallel wire grid with a relatively heavy wire or rod boundary, only the latter being shown in Figure 1.

Prior to the assembly of the compartment lining 12 in the casing 10, a requisite number of cap screws or bolts 14, with shallow rounded heads 15, are inserted in suitably spaced apertures in the lining 12 and are secured in place by nuts 16 on the inner side of the lining, the shank of the bolts extending into the compartment to receive spool-shaped shelf supports 17 which are subsequently screwed up against a washer 18 interposed between the nut 16 and a shoulder 20 on the inner end of the shelf support. The shelf supports are blind threaded, the outer ends thereof being formed as knobs 19 to prevent the shelf rod 13 from sliding off the end thereof. Thus the knob 19 and shoulder 20 of the shelf support form guides for the shelf rod 13, the shelf being freely movable therein to facilitate sliding thereof should it be desired to pull the shelf part way out of the refrigerator compartment to facilitate handling articles thereon.

I have found that it is preferable to mold the shelf supports from a phenolitic condensation product under the influence of heat and pressure as the resulting molded shelf support is non-resonant, hard and durable, has a low rate of heat transfer and facilitates the sliding of the shelf thereon without squeaks or vibration such as would result from sliding the shelf over hard metal supports, since the support mounting is such as to convert the compartment lining into a sounding board somewhat like the vibratory diaphragm type of warning signals. Thus the shelf support material is preferably a non-metallic or non-resonant, hard and impervious material that may also preferably be molded into its final form prior to hardening thereof.

In the use of such molded materials, it is possible to mold the thread therein to receive the threaded bolt 14. An alternative shown in Figure 3 is to form the threads in a sleeve 21 and then mold the shelf support body about the sleeve. This is advantageous in that it facilitates the molding operation and gives a stronger thread while also reinforcing the shelf support.

It will thus be seen that I have invented an improved and simplified shelf support for sliding shelves that will give improved results in service and will be economical to manufacture and install in the cabinet.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I,

therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as follows:

Means for supporting shelves in refrigerators subject to vibration incident to their operation and having a metal compartment lining provided with an aperture, said means comprising a bolt having a shank extending through the aperture and into the compartment, and a member of a phenol condensation product, or the like, adapted to form a support and a guideway, said member being secured to and substantially housing said bolt, whereby to substantially eliminate friction and consequent transfer of vibration between said lining and shelves resting on said supports.

JOHN H. KNAPP.