

[72] Inventor **Donald J. Hargadon**
 881 W. 86th St., Indianapolis, Ind. 46260
 [21] Appl. No. **844,570**
 [22] Filed **July 24, 1969**
 [45] Patented **Aug. 31, 1971**

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Primary Examiner—Donald A. Griffin

Attorney—Hood, Gust, Irish, Lundy & Coffey

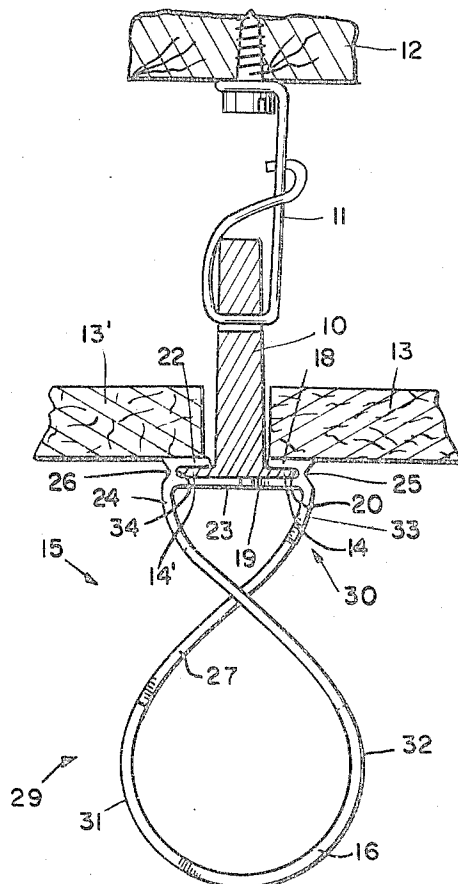
[54] LIMITED-STRESS HANGER CLIP 7 Claims, 4 Drawing Figs.

[52] U.S. Cl. 24/73 B,
 248/317
 [51] Int. Cl. A44b 21/00,
 E04g 17/18
 [50] Field of Search 24/73, 81 B,
 259 FC, 261.3, 73 B, 259; 248/317, 72, 343, 228

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ABSTRACT: A hanger clip intended for supporting decorations and the like from the hanger bars of conventional acoustical ceiling structures, the clip being designed for ready attachment to the flanges or arms of such a bar under its own inherent resiliency and further being designed to yield under a predetermined load suspended therefrom in order to prevent damage to the hanger bar or its conventional suspension. In a preferred form, the clip is an integral, injection-molding comprising a simple strip of inherently resiliently flexible synthetic plastic provided, at its opposite ends, with finger pairs projecting from a common surface of the strip to define, when the strip is bent to cross its ends, mutually facing, open mouths for engagement with such hanger bar arms, said fingers being formed of inherently brittle synthetic plastic material.



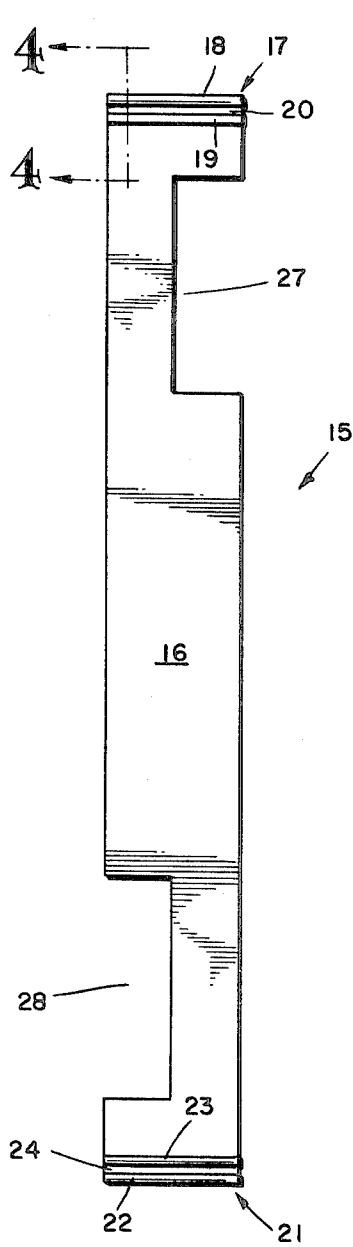


Fig. 1

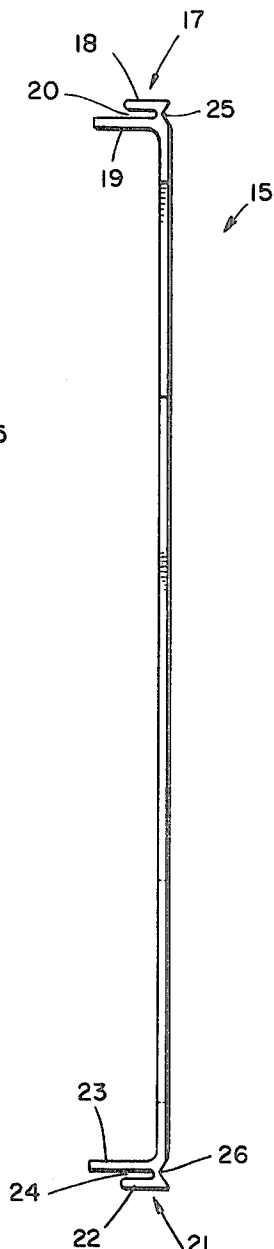


Fig. 2

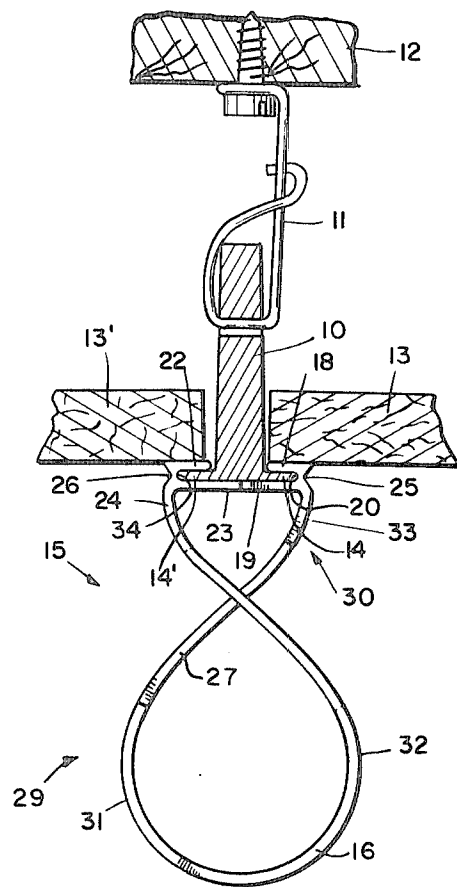


Fig. 3

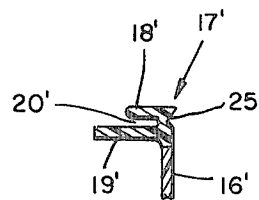


Fig. 4

INVENTOR
DONALD J. HARGADON

BY
Hood, Gust, Irish & Lundy
ATTORNEY

LIMITED-STRESS HANGER CLIP

Many public meeting rooms and the like are provided with ceilings of acoustic panels. The conventional means for supporting such ceilings consists of a series of hanger bars 10, of inverted-I cross section, suspended, usually by wires 11, from load-bearing elements 12 of the building, the edges of adjacent panels 13, 13' being supported, respectively, usually loosely, upon the oppositely-projecting arms 14, 14' of such hanger bars. For many public meetings, entertainments and the like, it is desirable to hang exhibits, decorations or ornamentation in such a room, and sometimes articles to be displayed are quite heavy. Such a ceiling is devoid of projections to which such articles can be attached and it is obviously undesirable to permit the users of such a room to drive screws, nails or other fastening means through the acoustic panels for the suspension of exhibits or decorations.

The primary object of the present invention, then, is to provide a simple, inexpensive, easily manipulated hanger clip which can be readily associated with the above-mentioned hanger bars to provide suspension means for such articles and which, when such articles are to be removed, can be readily disconnected from such hanger bars, all without damage to the ceiling structure.

A further object of the invention is to provide such a clip which can be easily manipulated with one hand for connection to such a hanger bar or for disconnection therefrom.

Still another object of the invention is to provide a clip of the character described which shall be so inexpensive that it may be discarded after a single use.

A still further, and very important, object of the invention is to construct such a hanger clip so that, if an attempt is made to suspend from it an article so heavy that it may cause damage to the hanger bar with which it is associated, or to the suspension means for such hanger bar, the clip will yield or break, thereby protecting the ceiling-suspension means against damage.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawing, attention being called to the fact, however, that the drawing is illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

In the drawings:

FIG. 1 is a front elevation of a preferred form of hanger clip embodying my invention;

FIG. 2 is a side elevation thereof, as viewed from the right of Fig. 1;

FIG. 3 is a sectional view through a fragment of a conventional acoustic ceiling structure, showing a hanger clip engaged with one of the hanger bars and suspended therefrom; and

FIG. 4 is a fragmentary section taken substantially on the line 4—4 of Fig. 1 to illustrate a preferred detail.

The preferred form of hanger clip, indicated generally by the reference numeral 15, is a simple, flat strip 16 of inherently resiliently flexible material carrying, at its opposite ends, finger pairs 17 and 21 projecting in a common direction from one face of said strip. The finger pair 17 comprises a distal finger 18 and a proximal finger 19 defining therebetween an open mouth 20; and similarly, the finger pair 21 comprises a distal finger 22 and a proximal finger 23 defining therebetween an open mouth 24. The clip is weakened, for the purpose above outlined, in one or more suitable regions. In the illustrated embodiment of the invention, the base of the finger pair 17 is weakened by reducing the section thereof as at 25 and similarly the base of the finger pair 21 is weakened as at 26. In its equilibrium condition, the clip will assume the form and attitude illustrated in Figs. 1 and 2.

Preferably, the body of the strip 16 is recessed in one lateral edge in a region near one end thereof and to a depth approximately one-half the width of the strip, as at 27; and it is cor-

respondingly recessed in its opposite edge near its opposite end as at 28. It will be perceived, then, that if the strip is flexed substantially at the midpoint of its length, the recessed regions 27 and 28 may be brought into cooperative registry so that the mouths 20 and 24 of the finger pairs 17 and 21 will be brought into substantially coplanar mutually facing relation, as illustrated in Fig. 3.

It will be perceived that, when the clip is in this condition, it may be conceived to comprise a body portion 29 and a jaw portion 30, the body portion comprising opposed sides 31 and 32 which are resiliently biased apart as a result of the inherent resiliency of the strip. The jaw portion of the clip comprises opposed jaws 33 connected to the body side 31 and 34 connected to the body side 32; and, because of the crossing of the end regions of the strip, the inherent resiliency of the strip biases the jaws 33 and 34 toward each other.

With the clip in this condition, if the body sides 31 and 32 are squeezed toward each other, the jaws 33 and 34 will be moved apart. If, now, the supported edges of a pair of panels 13 and 13' are lifted slightly off their ledges or hanger bar arms 14 and 14', the mouths 20 and 24 of the clip can be brought into registry with said hanger bar arms so that, when the squeezing pressure upon the clip body sides 31 and 32 is relaxed, the finger pairs 17 and 21 will be moved toward each other to engage the hanger bar arms within the mouths 20 and 24. Now, the clip may be released and its inherent resiliency will hold it in place on the hanger bar so that the panels 13 and 13' can be returned to supported relation with the hanger bar arms. Now, the closed-loop body portion 29 of the clip can be used as a suspension device to which may be attached any article which it is desired to hang from the ceiling structure.

However, because of the weakened regions 25 and 26, the hanger clip will yield if a weight exceeding its designed strength is suspended therefrom. If the finger pairs 17 and 21 are formed from the same material used to form the clip body 16, the yielding will usually be by bending of the fingers 18 and 22 about the reduced section 25 or 26.

I prefer, however, to form the finger pairs from an inherently brittle synthetic plastic, integrally joined to the strip body, in the manner suggested in Fig. 4. As there illustrated, the strip 16' will be formed from a synthetic plastic which is inherently resiliently flexible, but the finger pair 17' and, preferably, the finger pair corresponding to the pair 21 at the opposite end of the strip 16' will be formed from a relatively brittle or readily frangible synthetic plastic so that, when its designed supporting capacity is exceeded, the distal finger 18' will break away approximately at the region 25'.

Suitable synthetic plastic materials having the desired characteristics above outlined are well known to the art, as are procedures whereby injection-moldings integrally combining portions having different characteristics may be produced, and therefore specific compositions and procedural operations need not be detailed in the present specification.

What is claimed is:

1. For use with a wire-suspended hanger bar having substantially an inverted-T cross section and supporting an edge of a panel on each of its oppositely extending arms, a hanger clip comprising a body portion and a jaw portion, the body portion having opposed sides resiliently biased apart and the jaw portion comprising opposed jaws respectively connected to said body sides but oppositely arranged relative thereto whereby movement of said body sides toward each other against their bias will separate said jaws, each of said jaws having, at its distal end, an open mouth proportioned and designed, when such panels are slightly lifted off their hanger bar arms, snugly to receive an arm of such a hanger bar whereby said clip will be suspended from such a bar, said clip being formed with a weakened region to prevent the transmission through said clip of a load sufficient to damage such a hanger bar or its suspension.

2. A hanger clip comprising an integral strip of resiliently flexible material formed to provide a body portion and a jaw portion, the body portion having opposed sides resiliently

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biased apart by the inherent resiliency of said strip and the jaw portion comprising opposed jaws oppositely arranged relative to said opposed sides whereby movement of said body sides toward each other against their bias will separate said jaws, each of said jaws having an open mouth and said mouths opening toward each other, said clip being formed in its jaw portion with a weakened region to limit the load-bearing capacity of the clip to a predetermined value.

3. A hanger clip comprising a strip of resiliently flexible material provided, adjacent each of its ends, with a pair of fingers extending in a common direction from the same face of said strip to define an open mouth.

4. The hanger clip of claim 3 in which the distal finger of at least one pair is formed of a material more frangible than the

material of said strip.

5. The hanger clip of claim 3 in which the distal finger of each pair is formed of a material more frangible than the material of said strip.

6. The hanger clip of claim 3 in which the base of at least one finger pair is weakened to provide for separation of the fingers of said pair under a load which is insufficient to break the body of said strip.

7. The hanger clip of claim 3 in which the clip is an integral injection-molding, the body of said strip being formed from an inherently resiliently flexible synthetic plastic and the ends of said strip including the finger pairs being formed from an inherently brittle synthetic plastic.

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