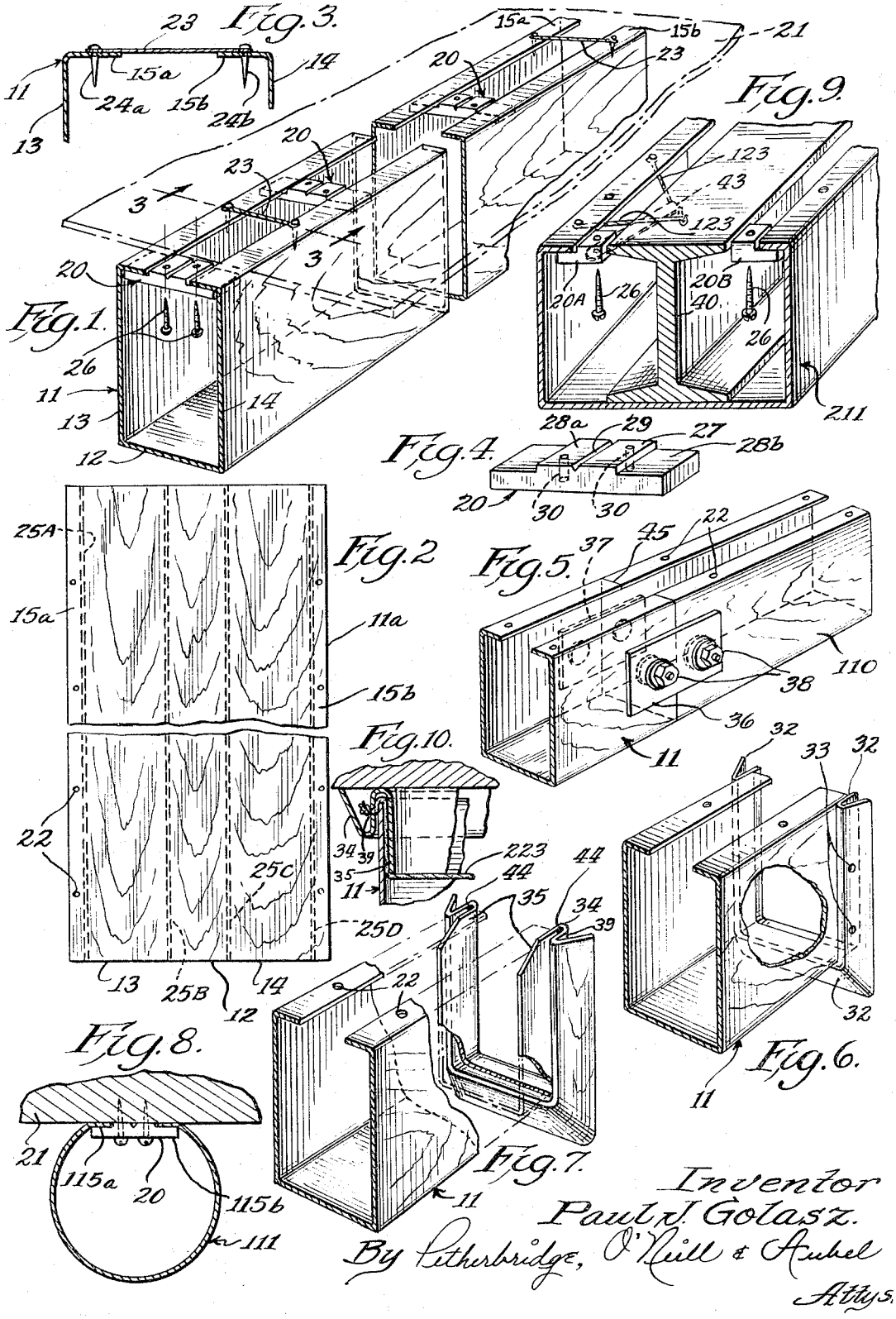
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ELONGATED HOUSING

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ELONGATED HOUSING

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My invention relates to a building product and, more particularly, to a housing or covering which may be mounted in position to simulate a solid building structure, or which may be used to cover an existing structure.

In recent years, so-called dropped beam ceilings have become popular to give a room a more appealing esthetic and decorative appearance. In such dropped beam ceilings, solid wooden beams are mounted beneath the ceiling so that the beams either support the ceiling or give the appearance of supporting the ceiling. The walls which support the beams have to be structurally strong, and often such walls have to be reinforced to support the additional weight of solid wooden beams.

Thus, the installation of wooden beams to provide a dropped beam ceiling is expensive especially in houses or buildings which are already built. Further the beams themselves are costly.

In the building industry, it is frequently necessary to cover an existing structure such as a bare pipe, I-beam, an unfinished piece of lumber or similar structure to give it a more decorative appearance. In such cases, frequently a covering frame is formed around the existing structure. The price of materials used for such purposes and the cost of installation are often very high.

Accordingly, it is a principal object of my invention to provide a housing or covering which may be mounted in position to simulate a solid building structure.

It is another object of my invention to provide a decorative simulated wooden beam which may be used in dropped beam ceilings.

It is another object of my invention to provide a simulated wooden beam which is inexpensive and which can be easily mounted into position.

It is still a further object of my invention to provide a housing or covering which may be easily mounted into position and which may be dismounted or disassembled with a minimum of effort.

It is still another object of my invention to provide a housing or covering which is light in weight and which may be mounted on relatively light bracket or holder units.

It is yet a further object of my invention to provide a housing or covering which may be formed of cardboard or any suitable light material and which may be cut in a desired configuration and formed and mounted in the desired shape.

It is yet a further object of my invention to provide a housing or covering which may be shipped as a flat piece of material and which can be easily formed into the desired shape and mounted in position at the location of usage.

In the attainment of the foregoing objects, I provide a housing or covering which may be cut as a flat sheet into a desired shape, and which may be formed into a desired shape at the location of usage. The housing or covering includes a body portion having two ends forming folding edges or tongues. The edges of the housing are received in recessed formed brackets mounted in a base surface and tension means hold the edges of the housing in the recesses to secure the housing in its mounted position.

Other objects and advantages of this invention will become apparent in the following detailed description and

in the accompanying drawings forming a part of this specification and in which:

FIG. 1 is an isometric view of a housing or covering according to the invention and is in the form of a wooden beam;

FIG. 2 shows a flat sheet from which the beam of FIG. 1 is formed;

FIG. 3 shows the top portion of the beam of FIG. 1 and the tension means in the form of a string arranged to hold the edges of the beam in position;

FIG. 4 is an isometric view which shows a bracket for supporting the beam of FIG. 1;

FIG. 5 shows an isometric view of a plate for joining or abutting two beams;

FIG. 6 is an isometric view of a molding strip which may be positioned at the ends of the beam;

FIG. 7 is an isometric view showing a modification of the molding strip of FIG. 6;

FIG. 8 is a cross sectional view of a circular housing according to the invention;

FIG. 9 is an isometric view of another embodiment of my invention adapted to be mounted to enclose an I-beam; and

FIG. 10 is a cross sectional view of the left hand portion of the molding strip of FIG. 7.

Referring to FIG. 1, the housing of my invention is shown in the form of an elongated beam **11** having a rectangular cross section which may be mounted beneath a ceiling to simulate a solid wooden beam and give the appearance of a dropped beam ceiling. The beam **11** has an external color and markings such as, for example, to simulate the lumber grains of a wooden beam. The beam **11** is preferably formed of a relatively heavy cardboard, but it may also be of light metal, plastic, or other suitable material. The bottom **12** and the two sides **13** and **14** of the rectangular beam are closed. The top of the beam is open along its length and includes two fold edges **15***a* and **15***b*. The fold edges **15***a* and **15***b* are received by brackets **20** which support the beam **11** in position on the ceiling **21**. A number of brackets **20** (see also FIG. 4) are positioned in spaced relation to provide support to the entire length of the beam **11**. The length of the brackets **20**, that is, the dimension transverse to the axis of the beam is approximately the same as the internal dimension of the beam **11**, and the width of the bracket **20** may be of any convenient size. The brackets include a raised center portion **27** of any convenient thickness, as about ¾ inch, and tiered or stepped down side portions **28***a* and **28***b*, which are stepped down approximately the thickness of the material from which the beam **11** is made. The length of the center portion measured transverse to the axis of the beam is such that the width of the folding edges **15***a* and **15***b* added to the length of the center portion is equal to the inside width of the bottom **12** of beam **11**; this assures that the beam **11** assumes a rectangular shape when mounted in position. An aligning notch **29** is formed in the center portion **27** in a direction transverse to the length of the bracket **20**. The brackets **20** are secured to the ceiling **21** as by screws **26** inserted through apertures **30** formed in center portion **27**. When the bracket **20** is mounted, the tiered down or stepped portion **28***a* and **28***b* form recesses of a height sufficient to snugly receive the respective edges **15***a* and **15***b* of the beam **11**. If desired, to make an even tighter fit, the recesses **28***a* and **28***b* may be tapered with the larger dimension of the taper being at the ends of the bracket tapering toward a smaller dimension at the step of the recesses **28***a* and **28***b* with center portion **27**. A tension string member **23** (see also FIG.

3) such as of an elastic or spring material of any suitable known type is connected at either end to expandable clips or hooks **24***a* and **24***b* which are inserted into apertures **22** formed in the folding edges **15***a* and **15***b* of the beam **11**. The clips are of any suitable known type which once inserted in the apertures **22** from one side of edge **15***a* expand or hook and engage the opposite side of edge **15***a*. The tension members **23** tend to draw or pull the edges **15***a* and **15***b* together. In one preferred embodiment of the invention, I found metal tipped elastic to function satisfactorily as tension members **23**.

The beam **11** is initially formed and preferably shipped as a flat sheet labelled **11***a*, as shown in FIG. 2. The sheet **11***a* is formed of any desired length. The sheet **11***a* is scored or grooved on the inner side of the sheet as indicated by the dotted lines **25**A, **25**B, **25**C and **25**D to define the edges **15***a* and **15***b*, the bottom **12**, and the sides **13** and **14**, to thus permit the sheet **11***a* to be folded in the desired form of the beam **11**.

In mounting the housing **11**, the first step is to align the brackets **20** and affix the brackets into the ceiling such as by screws **26**. To position the brackets, a line is drawn on the ceiling **21** and the aligning notch **29** on each bracket is centered on this line. I have found that spacing the brackets at about 30" intervals provides good support for a beam made of heavy cardboard. After the brackets **20** are mounted in position, the sheet **11** is folded along the various scoring or grooves **25**A, **25**B, **25**C and **25**D to form the elongated rectangular shaped beam **11**.

Next, the clips **24***a* and **24***b* of the spring members **23** are inserted into respective apertures **22** formed in the respective edges **15***a* and **15***b*. Preferably, the clips **24***a* and **24***b* are inserted from the external side of the edges **15***a* and **15***b* so that clips are substantially flush with the external side of the edges and do not obstruct the mounting. Alternatively, the tension member, if it is elastic, rubber, or the like, can be stapled into the beam. As mentioned above, tension member **23** urges the edges **15***a* and **15***b* toward one another.

As will be readily appreciated when the housing of my invention is used to cover an existing structure such as a pipe, the sheet **11***a* may be folded around the selected pipe before the tension members **23** are inserted in apertures **22**.

To mount the beam **11** on the brackets **20**, the folding edges **15***a* and **15***b* are pulled apart against the tension of member **23**, and to a position in which the edges **15***a* and **15***b* can be slipped over the ends of a bracket **20**. After the edges **15***a* and **15***b* are slipped over a bracket **20** the edges **15***a* and **15***b* are released and the tension of member **23** urges the edges **15***a* and **15***b* into the recesses formed by tiered portions **28***a* and **28***b*. The center portion **27** of the brackets **20** is of a width and the folding edges **15***a* and **15***b* are dimensioned such that when the edges **15***a* and **15***b* are drawn by tension member **23** into engagement with the center portion **27** the housing will assume a rectangular shape. The same operation is performed throughout the length of the beam to mount the folding edges **15***a* and **15***b* in the brackets **20**.

The beam **11** is made of a sturdy enough material such as heavy cardboard to maintain its rectangular cross sectional shape.

I found the best means of mounting the beam **11** which is of a dimension longer than the room in which it is mounted is to cut the beam just a trifle less (about ½ inch less) than the dimension of the room. This permits freer, easier handling of the beam and prevents wedging of the beam against the walls as the beam is raised and mounted in position. Next, in order to close the space between the wall and the beam, a molding strip **32** is mounted on the beam.

The molding strip **32** can be of the same material as the beam and its dimensions are such as to externally fit around the beam **11**. As shown in FIG. 6, the molding strip **32** is V-shaped in cross section with the open part of the V arranged to bear on the wall against which the end of the beam rests. The molding strip **32** can be attached as by reuseable double-backed pressure sensitive tape of any well known type or by removable clips indicated as **33**.

Another embodiment of the molding strip, which does not need fasteners or screws for affixing it to the beam is shown in FIG. 7. In the embodiment of FIG. 7, a V-shaped molding strip **34** generally similar to molding strip **32** of FIG. 6 includes an insert portion **35** which fits over the end of the beam **11** and extends internal into the end of the beam **11** to hold the molding **34** in position.

A resilient material **44** such as sponge rubber is placed in the groove of the strip **34** into which the end of the beam **11** is inserted. When the beam **11** is mounted, the end of the beam pushes against and compresses the resilient material **44** which causes the molding strip **34** to push against or firm up to the wall.

Another means of positioning the molding strip **34** between the ends of the beam **11** and the wall is shown in FIG. 10. Referring to FIGS. 7 and 10, one end of a resilient band **233**, such as a rubber band, is affixed to the left (as oriented in the figures) mid section **39** of the strip **34**, and the band **233** is extended around the left insert portion **35** of strip **34** and across the molding strip and around the right insert portion **35**, and is affixed to the right mid section **39** of strip **34**. The end of the beam **11** inserted into the groove of molding strip **34** will stretch the band **233** and cause the molding strip **34** to be pushed against or firm up to the wall.

In those cases where the length of the room is longer than the beam length, I have found that two beams can be abutted to one another for mounting, see FIG. 5. The abutting ends **45** of beams **11** and **110** are cut to have as close a mating relation as possible. Next, preferably thick, but lightweight mating plates **36** and **37** made from plastic or any suitable material to resemble metal, and each having bolt receiving holes are positioned across the abutting joint **35** such as by thick but lightweight dummy nut and bolt plastic units **38**. I have found that by exaggerating the connection between the abutting joints of beams **11** and **110** by the use of large plates such as **36** and **37** and the nut and bolt units **38**, a very appealing esthetic appearance results.

As mentioned above, the housing of my invention can be of rectangular cross section as is beam **11** or it can be of any other desired cross sectional shape. For example, another embodiment of my invention is shown in FIG. 8 wherein the housing or covering is in the form of a beam **111** having a circular cross section. The bracket mounting means for affixing the beam **111** to the ceiling **20** is the same as that for beam **11** of FIGS. 1–7. The beam **111** includes folding edges **115***a* and **115***b* which are utilized to mount the beam **111** in the same manner as for beam **11**. Thus the beam **11** simulates a rectangular wooden beam, and beam **111** simulates a circular or round wooden beam. For the circular beam **111**, a rounded molding strip similar to molding strips **32** and **34** would be used.

Another embodiment of the beam **11** of FIG. 1, especially arranged to be mounted to enclose an I-beam **40** is shown in FIG. 9 and labelled as beam **211**. The beam **211** has to be of a large enough cross sectional dimension to completely enclose the I-beam. Otherwise, the beam **211** is similar in shape to the beam **11**. The principal modification of the beam **211** of FIG. 9 over the beam **11** of FIG. 1 is the mounting means. To mount the beam **211**, each of the brackets **20** of FIG. 1 are cut along the center line **29** to form separate brackets **20**A and **20**B which are affixed to the ceiling such as by suitable screws **26**. Alternatively, brackets **20**A and **20**B may initially be formed as separate pieces. The

plurality of brackets 20A and 20B are positioned along the side of the overhanging upper portion of the I-beam 40. As can be readily appreciated, in the embodiment of FIG. 9, a tension means cannot connect side edges of beam 211 in the same manner that elastic band 23 connects side edge 15*a* to the opposite side edge 15*b* of the beam 11 of FIG. 1. In view of this, in the embodiment of FIG. 9, an elastic band 123 is connected to spaced points on the same side edge of the beam 211. A hook arm 43 is mounted on the brackets 20A and 20B (for purposes of example, a hook arm 43 is shown only in connection with one bracket 20A), and arm 43 is positioned to extend under the overhanging upper portion of the I-beam. When mounting beam 211, the elastic band 123 is hooked on the hook arm 43 to tend to draw or pull the respective side edge of the beam 211 inwardly toward the I-beam 40.

Further, while a separate tension member 23 is utilized in mounting the beams described above, it has been found that a resilient material such as extruded plastic can be pre-formed as a housing to itself effect the inwardly pulling force on the side edges provided by tension member 23.

It will be appreciated that while the housing of my invention has been described as being in the form of beams 11, 111 and 211 for mounting on ceilings, my housing can also be mounted on a vertical wall to simulate a pillar or other perpendicularly oriented support, or my housing can be mounted to cover an existing vertical structure. The means of mounting my housing in a vertical position is the same as described above for mounting my housing on a ceiling to simulate a beam.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to a preferred embodiment and modifications thereof, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the following claims.

What is claimed is:

1. A simulated solid beam, comprising, in combination, a sheet material folded to have the edges of the sheet facing one another,
- means positioned at spaced points along side edges of said sheet for tensionally urging said edges toward one another and holding said edges in position,
- bracket means supporting said beam in position,
- each said bracket means forming receiving portions of respective ones of said edges,
- and spacing means associated with said bracket for spacing said side edges so that said beam assumes its desired cross sectional shape.

2. A simulated solid beam comprising in combination, a sheet material folded to have the side edges of the sheet facing one another in substantially the same plane,
- tension means affixed to spaced points along said side edges urging said edges toward one another,
- bracket means having a raised center portion and recessed outer portions,
- said center portion supporting said beam in position and said recessed outer portions receiving portions of respective ones of said side edges,
- said tension means holding said side edges in said recesses, and
- said raised portion spacing said side edges so that the beam assumes its desired cross sectional shape,
- whereby said beam may be mounted on said bracket means by opening said side edges against the force of said tension means and slipping said side edges around said brackets and into said recesses.

3. A bracket means according to claim 2 wherein said raised portion is mountable on a support surface and said recessed outer portions define a space between the surface and the bracket for receiving said side edges.

4. A bracket means according to claim 2 wherein said bracket means includes an aligning notch.

5. A beam according to claim 1 wherein the sheet material is marked to designate the desired folds.

6. A simulated elongated solid beam comprising, in combination, a sheet material marked to designate the desired folds and forming in cross section a rectangular shaped beam having three closed sides and an open side,
- said open side having two fold edges spaced from one another,
- tension means affixed to said fold edges urging said fold edges toward one another,
- and bracket means for receiving said fold edges and supporting said beam.

7. A simulated solid beam according to claim 2 including a molding strip arranged to fit externally around the end of said beam and to be positioned against a surface,
- said strip having a groove for receiving the end of said beam,
- and a resilient material positioned in said groove whereby when the end of the beam is received in said groove the resilient material will be compressed to cause said strip to push against and be firmed on said surface.

8. A simulated solid beam according to claim 2 including a molding strip having an outer portion fitting externally around the end of said beam,
- an insert portion insertable in the interior of said beam,
- said strip having a groove for securing the end of said beam,
- and a resilient string extending across said strip and being resiliently deformed when said beam is received in said groove to thereby cause said strip to push against and be firmed on said surface.

9. A simulated solid beam according to claim 2 including plate means for joining and abutting said beam with another similar beam.

10. A simulated solid beam according to claim 1 wherein said sheet material is foldable to have a circular cross section.

11. A beam according to claim 1 wherein said sheet material is
- colored and textured to simulate wood,
- and wherein grooves are formed to indicate the lines where folds are to be made.

12. A beam according to claim 2 wherein said tension means comprise a resilient material affixed to said edges.

13. A building product for enclosing an I-beam comprising, in combination, a sheet material folded to have the side edges of the sheet facing one another in substantially the same plane,
- tension means affixed to spaced points along a side edge of said sheet,
- bracket means mounted adjacent said I-beam,
- each said bracket means forming recesses for receiving portions of respective ones of said side edges,
- arms mounted with said bracket means and said tension means being engaged by said arms for urging said side edges in toward said recesses.

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