May 20, 1969 P. HALLSTEDT 3,445,136

KNEELERS

Filed July 27, 1967

FIG. 1

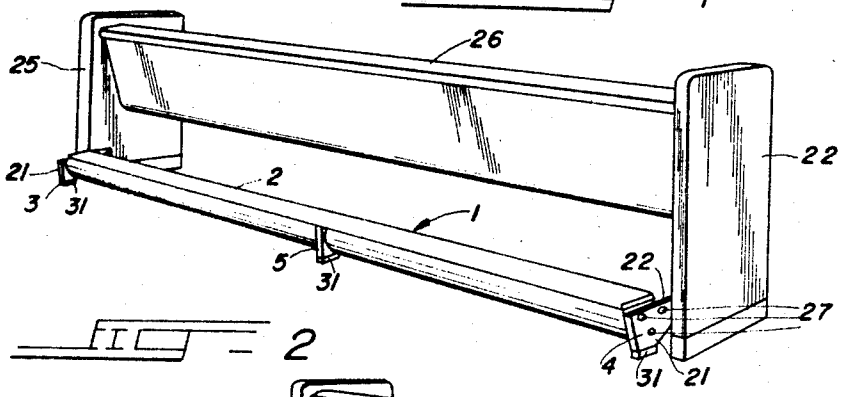


FIG. 2

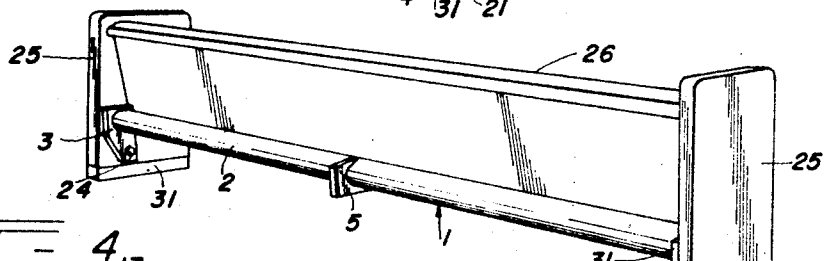


FIG. 4

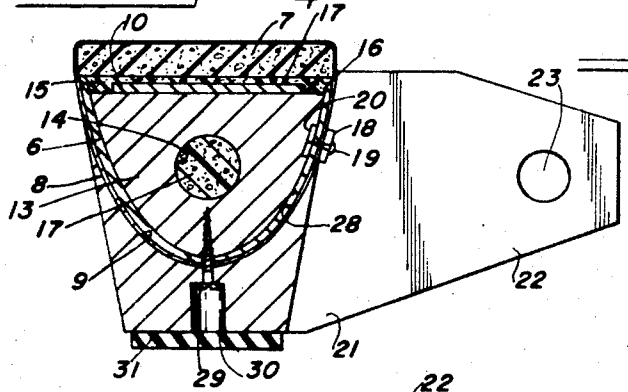


FIG. 5

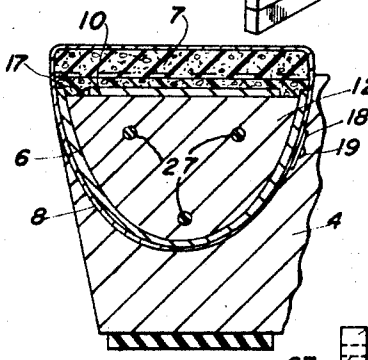


FIG. 6

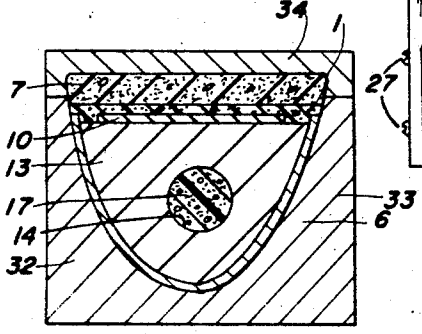
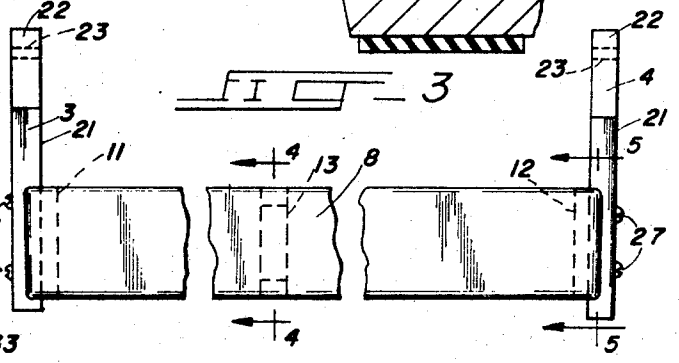


FIG. 3



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KNEELERS

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U.S. Cl. 297—426 11 Claims

ABSTRACT OF THE DISCLOSURE

A kneeler, and method of making the same, wherein the kneeler embodies an elongated body member and supports therefor, with the body member embodying an elongated pad mounted on top of a substantially hollow shell filled with a lightweight material which acts as reinforcing for the shell and also adhesively secures parts of the body member together.

Background of the invention

The present invention relates to kneelers and, more particularly, to kneelers which are particularly well adapted for use on church pews, and the like.

It is a primary object of the present invention to afford a novel kneeler.

Kneelers for use in church pews, of course, have been heretofore known in the art. However, such kneelers as have been heretofore known have had several inherent disadvantages, such as, for example, being heavy in weight; being uncomfortable to use; being difficult to fabricate and assemble; being difficult and expensive to manufacture; or being displeasing in appearance, and the like. It is an important object of the present invention to overcome such disadvantages.

Another object of the present invention is to afford a novel kneeler which is light in weight.

Another object is to afford a novel kneeler wherein parts thereof are secured together in a novel and expeditious manner.

Yet another object is to afford a novel kneeler wherein parts thereof may be formed and assembled in molding operations in a novel and expeditious manner.

A further object is to afford an attractive, readily manufactured kneeler.

Another object of the present invention is to afford a novel kneeler which is readily movable between raised and lowered positions.

Another object is to enable a novel kneeler for use on church pews, and the like, to be manufactured in a novel and expeditious manner.

A further object is to afford a novel kneeler which is practical and efficient in operation, and which may be readily and economically produced commercially.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show a preferred embodiment of the present invention and the principles thereof and what I now consider to be the best mode in which I have contemplated applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

Description of the drawings

In the drawings:

FIG. 1 is a rear perspective view of a church pew showing a kneeler embodying the principles of the present invention disposed thereon in lowered position;

FIG. 2 is a view similar to FIG. 1, showing the kneeler disposed in raised position;

FIG. 3 is a fragmentary top plan view of the kneeler shown in FIG. 1;

FIG. 4 is an enlarged, detail sectional view taken substantially along the line 4—4 in FIG. 3;

FIG. 5 is an end elevational view of the body portion of the kneeler taken substantially along the line 5—5 in FIG. 3; and

FIG. 6 is a somewhat diagrammatic view of the body portion shown in FIG. 5, with the body portion disposed in a mold during the making thereof.

Description of the embodiment shown herein

A kneeler **1**, embodying the principles of the present invention, is shown in the drawings to illustrate the presently preferred form of the invention.

The kneeler **1** embodies, in general, an elongated, substantially straight body member **2** supported at each end by respective end supports or brackets **3** and **4**, and supported between the end supports **3** and **4** by an intermediate support **5**, FIG. 1.

The body member **2** includes an elongated, substantially tubular-shaped housing **6** having a kneeling pad **7** mounted on the top thereof, and with the housing **6** and the kneeling pad **7** preferably completely covered throughout their lengths by a suitable, single cover member **8**.

The housing **6** includes an elongated, substantially trough-shaped, upwardly opening body portion or shell **9**, having a top wall **10** mounted thereon in position to partially close the top thereof, FIG. 4, as will be discussed in greater detail presently. Two end walls **11** and **12**, FIG. 3, which are identical in construction, are mounted in the respective opposite ends of the shell **9** to close the ends of the housing **6**. An intermediate wall **13**, which may be identical in size and shape to the end walls **11** and **12**, is mounted in the shell **9** in parallel spaced relation to the end walls **11** and **12**, FIG. 3. The intermediate wall **13** preferably has an opening **14** extending laterally through the central portion thereof, FIG. 4, for a purpose which will be discussed in greater detail presently.

Each of the walls **11–13** is so disposed in the shell **9** as to be disposed in underlying supporting engagement with the top wall **10** in the assembled housing **6**. The walls **11–13** preferably terminate at their upper ends below the plane of the top of the shell **9** a distance equal to the thickness of the top wall **10** so that, when the top wall **10** is disposed in assembled position on the walls **11–13** its upper face is disposed in uniplanar relation to the top of the shell **9**. The shell **9** may be made of any suitable material, such as, for example, ⅛ inch hardwood veneer, and the walls **11–13** may be of any suitable material, such as, for example, hardwood blocks. The shell **9**, the top wall **10** and the walls **11–13** are preferably secured together in the body member **2** by suitable means, such as, for example, gluing.

The top wall **10** extends the entire length of the shell **9**, but is narrower in width than the top of the shell **9** and preferably is centered between the upper longitudinal edges **15** and **16** of the shell **9** in spaced relation thereto, FIGS. 4 and 5. In the assembled kneeler **1**, the housing **9** is preferably filled to overflowing throughout its length between the walls **11** and **13**, and between the walls **12** and **13**, with a suitable lightweight combination reinforcing and adhesive material **17**, FIGS. 4 and 5, such as, for example, a suitable plastic material such as flexible polyurethane foam. With the housing **6** filled in this manner, the overflow of the material **17** passes upwardly between the top wall **10** and the respective adjacent upper

edge portions 15 and 16 of the shell 9, and is disposed between the pad 7 and the top wall 10 for adhesively securing the pad 7 to the housing 6, as shown in somewhat exaggerated form in FIGS. 4 and 5. In addition, the material 17 in the housing 6 affords reinforcing for the body portion 2 and further extends through the opening 14 in the intermediate wall 13, FIG. 4, to secure the wall 13 and the top wall 10 together.

The pad 7 may be made of any suitable material, but I prefer to make it of reconstituted foam rubber having not less than a five-pound density. Preferably, the pad 7 is of such length and width that it extends the full length and width of the housing 6 and terminates at its marginal edges in vertical alignment with the corresponding marginal edges of the housing 6 in the assembled body portion 2.

The cover 8 may be made of any suitable material, such as, for example, leather, or a suitable wear-resistant, flexible plastic sheeting material such as that sold under the trademark Naugahyde, and is preferably of one-piece construction. It may be wrapped around the assembled housing 6 and pad 7 throughout the length thereof, in position to completely cover the lateral faces of the pad 7 and the housing 6. The cover 8 may be secured to the pad 7 and housing 6 in any suitable manner, such as by adhesively securing it to the outer face of the shell 9 or securing the longitudinal edges of the cover 8 to the shell 9 by staples, not shown, and a suitable elongated trim member 18 may be secured to the shell 9 by suitable means such as tacks or nails 19, FIG. 4, in overlying relation to the longitudinal edges of the cover 8. In the kneeler 1, a reinforcing and stiffening strip 20 is secured to the inner face of the shell 9, FIG. 4, by any suitable means such as gluing. The stiffening strip 20 preferably is disposed in underlying relation to the trim member 18 in position to receive the tacks 19.

The end supports 3 and 4 are identical in construction. Each embodies a body portion 21 from which an elongated ear 22 projects forwardly. Each of the ears 22 has an opening 23 therein, FIG. 4, through which a suitable fastening member such as a pin or bolt 24, FIG. 2, may be inserted for pivotally connecting the end supports 3 and 4 to suitable supports, such as respective supporting members 25 of a church pew 26, shown in FIGS. 1 and 2. With such construction, the kneeler 1 may be pivoted around the bolts 24 mounted in the end supporting members 3 and 4 between a lowered position for kneeling, as shown in FIG. 1, and a raised position for non-use, as shown in FIG. 2. The end supports 3 and 4 may be secured to the assembled body member 2 by any suitable means, such as, for example, screws 27, FIGS. 1, 3 and 5, extending through the end supports 3 and 4 into the end walls 11 and 12, respectively, of the housing 6.

The intermediate support 5 embodied in the kneeler 1 preferably has an upwardly opening recess 28 formed therein, which is complementary in shape to the outer surface of the lower portion of the housing 6. It may be secured to the housing 6 by any suitable means such as a screw 29 inserted upwardly through an opening 30 in the bottom of the intermediate wall 5 and threaded into the lower portion of the shell 9, FIG. 4, in position to firmly hold the shell 9 in the recess 28. Each of the supporting members 3–5 preferably has a pad 31, FIGS. 1, 2 and 4, made of suitable material such as, for example, rubber, or the like, secured to the bottom thereof by suitable means such as gluing.

In the manufacture of the kneeler 1, the body portion or shell 9 of the housing 6 may first be placed into a suitable mold, such as, for example, the lower portion 32 of a mold 33, FIG. 6. The stiffening strip 20 may be glued in position on the inner face of the shell 9. The end walls 11 and 12 and the intermediate wall 13 then may be placed in position in the shell 9, and the top wall 10 may be disposed in position on the walls 11–13. Prior to thus assembling the shell 9, the walls 11–13 and the top wall 10, glue may be applied to the portions thereof which will engage the other members in the assembly so that in the assembled housing 6 these members are glued together.

After thus assembling the shell 9, the walls 10–13 and the stiffening strip 20 in the mold 33, the shell 9 may be filled to a level above the upper face of the top wall 10 with a suitable plastic material, such as a flexible polyurethane foam mixture, having a proper consistency such as that of soft butter, by feeding the mixture through the spaces afforded between the top wall 10 and the adjacent upper edge portions 15 and 16 of the shell 9. This affords a layer of the material 17 on the upper face of the top wall 10 as shown in somewhat exaggerated form in FIGS. 4, 5, and 6. The pad 7, which it will be remembered is preferably made of reconstituted foam rubber, may then be placed in operative position on top of the housing 6 with its lower face in engagement with the material 17 disposed on the upper face of the top wall 10.

With the pad 7 and housing 6 so disposed relative to each other, a top member 34 of the mold 33 may then be placed in operative position on the bottom member 32 thereof, and the two members 32 and 34 of the mold 33 may be clamped together by suitable means, not shown, in position to clamp the pad 7 and the housing 6 together in assembled position relative to each other, FIG. 6. The thus assembled housing 6 and pad 7 may be left in the mold 33 for a curing period sufficient for the material 17 to set, and this integrally molded and bonded unit may then be removed from the mold 33. In this condition, the material 17 affords reinforcing for the housing 6, and also serves to adhesively secure the pad 7 to the wall 10, and the wall 10 to the walls 11–13.

Thereafter, the cover 8 may be applied to the thus assembled housing 6 and pad 7, with the longitudinal edges of the cover 8 stapled or otherwise suitably secured to the outer face of the shell 9 in overlying relation to the stiffener strip 20, and the trim strip 18 may be secured in overlying relation to the longitudinal edges of the cover 8 by the tacks or nails 19 inserted into the shell 9, to complete the assembling of the body member 2.

Thereafter, the end supports 3 and 4, with the pads 31 mounted therein, may be secured to the respective ends of the body member 2 by inserting the screws 27 through the body portions 20 of the supporting members 3 and 4 into the end walls 11 and 12, respectively, of the housing 6. The intermediate support 5 then may be mounted on the bottom of the shell 9 of the housing 6 and secured thereto by the screw 29, and the pad 31 on the bottom of the intermediate support 5 may be secured in operative position to the bottom of the support 5 by gluing, or the like, to thereby complete assembly of the kneeler 1.

When it is desired to mount the kneeler 1 in operative position on a suitable supporting unit such as the pew 26, FIGS. 1 and 2, the kneeler 1 may be disposed in operative position on the pew 26 and bolts 24 may be extended through the supporting members 25 of the pew 26 and the openings 22 in the supporting members 3 and 4 to thereby pivotally connect the kneeler 1 to the pew 26.

The kneeler 1 is shown in the drawings as embodying one intermediate support 5 and one intermediate wall 13. However, in certain installations, wherein the kneeler 1 is relatively short, it may not be necessary or desirable to embody either the intermediate supporting member 5 or the intermediate wall 13; and in other installations, wherein the kneeler 1 is relatively long, it may be desirable to embody therein more than one intermediate support 5 and more than one intermediate wall 13. As will be appreciated by those skilled in the art, the single support 5 and the single intermediate wall 13 is shown merely by way of illustration and not by way of limitation, and a lesser or greater number of supports 5 and intermediate walls 13 may be embodied in a kneeler without departing from the purview of the present invention.

Also, if desired, rather than place the material 17 in the shell 9 after placing the top wall 10 thereon, the

material may be fed into the shell **9** before the top wall **10** has been disposed in operative position on top of the walls **11–13**. If this latter method is used, the shell **9** is preferably filled to overflowing so that the material **17** flows upwardly around the top of the wall **10**, when the latter is placed in assembled position on the walls **11–13**, for adhesively securing the pad **7** to the wall **10** and adhesively securing the wall **10** to the wall **11–13**, as previously mentioned.

From the foregoing it will be seen that the present invention affords a novel kneeler for use on church pews, and the like, which is so constructed that it is structurally strong while being light in weight.

Also, it will be seen that the present invention affords a novel kneeler which is attractive in appearance as well as being practical and comfortable in use.

In addition, it will be seen that the present invention affords a novel method of making a kneeler for use on church pews, and the like.

Also, it will be seen that the present invention affords a novel kneeler which is practical and efficient in operation and which may be readily and economically produced commercially.

Thus, while I have illustrated and described the preferred embodiment of my invention, it is to be understood that this is capable of variation and modification, and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A kneeler for use on church pews, and the like, embodying upstanding supports, said kneeler comprising
(a) an elongated body member comprising
(1) a substantially tubular-shaped housing having a top wall,
(b) a pad mounted on the upper face of said top wall and extending longitudinally of said housing, and
(c) supporting means attached to said body member for supporting said body member,
(d) said housing being substantially filled with foamed material.

2. A kneeler as defined in claim **1**, and in which
(a) said foamed material is a resilient material.

3. A kneeler as defined in claim **3**, and in which
(a) said foamed material
(1) extends upwardly over said top wall and
(2) adhesively engages said pad to thereby secure said pad to said top wall.

4. A kneeler as defined in claim **3**, and in which
(a) said foamed material comprises a flexible polyurethane foam.

5. A kneeler as defined in claim **4**, and in which
(a) said pad comprises reconstituted foam rubber.

6. A kneeler as defined in claim **3**, and
(a) which includes a cover of flexible sheet material, and
(b) in which said cover extends around said housing and pad in substantially completely covering relation thereto substantially throughout the entire length of said housing.

7. A kneeler for use on church pews, and the like, embodying upstanding supports, said kneeler comprising
(a) an elongated body member comprising
(1) a substantially tubular-shaped housing having a top wall,
(b) a pad mounted on the upper face of said top wall and extending longitudinally of said housing, and
(c) supporting means attached to said body member for supporting said body member,
(d) said body member including
(1) end walls mounted in said housing in supporting relation to said top wall, and
(2) a partition wall mounted in said housing between said end walls in spaced relation to the latter and in supporting relation to said top wall.

8. A kneeler as defined in claim **7**, and in which
(a) said partition wall has an opening therethrough,
(b) said housing has foamed material therein,
(c) said foamed material
(1) extends upwardly around said top wall,
(2) extends through opening, and
(3) adhesively secures said top wall, said partition wall and said pad together.

9. A kneeler as defined in claim **1**, and in which
(a) said supporting means comprises brackets mounted on the ends of said body member and adapted to be pivotally mounted on such a pew for rotatably mounting said body member for movement between a lowered position for kneeling and a raised position for non-use.

10. A method of making a kneeler for use on church pews, and the like, comprising
(a) forming an elongated housing having top wall partally closing the top thereof,
(b) filling said housing to overflowing with a flexible adhesive foam,
(c) placing an elongated pad on said top wall in engagement with the overflow of said foam, and
(d) adhesively securing together said housing and said pad by said foam.

11. A method of making a kneeler for use on church pews, and the like, comprising
(a) forming an elongated, upwardly opening, substantially trough-shaped shell of wood veneer,
(b) placing wood end walls in the respective ends of said shell and securing them thereto,
(c) placing a wood partition wall, having an opening therethrough, in said shell between said end walls and securing said partition wall to said shell,
(d) placing a top wall on said end walls and on said partition wall in position to partially close the top of said shell,
(e) filling said shell to a level above said top wall with a flexible polyurethane foam mixture,
(f) placing a reconstituted rubber pad on said top wall on the said wall thereof remote from said end and partition walls and in engagement with said foam mixture,
(g) clamping said pad, top wall, end walls, partition wall and shell together into an assembly,
(h) curing said clamped-together assembly until said polyurethane foam sets and thereby secures said pad, top wall and shell together,
(i) then unclamping said assembly and securing a flexible cover sheet thereto in position to substantially completely cover said assembly from one end to the other of said shell, and
(j) then securing supporting members to the ends of said covered assembly.

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U.S. Cl. X.R.

264—45; 297—439, 461

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,445,136 May 20, 1969

Paul Hallstedt

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

Column 5, line 45, the claim reference numeral "3" should read -- 1 --.

Signed and sealed this 14th day of April 1970.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents