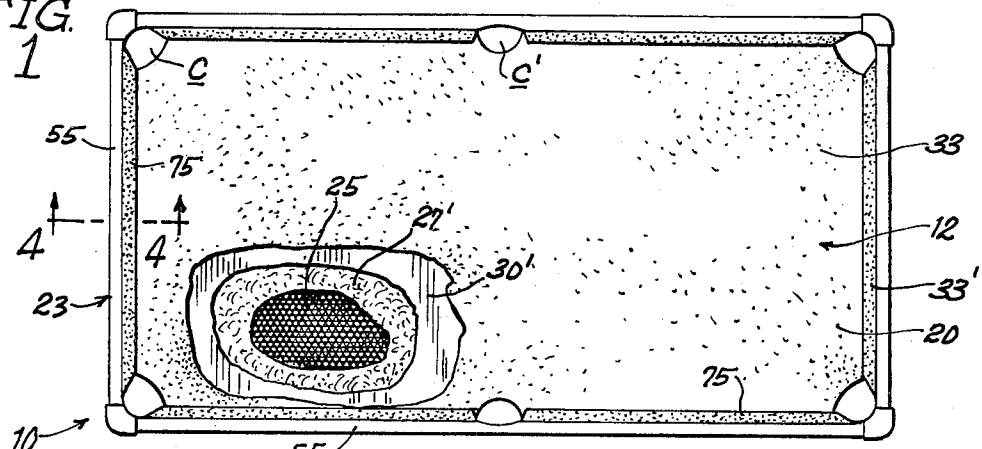
Jan. 13, 1970 H. W. STILLMAN, JR., ETAL 3,489,410

WEATHER RESISTANT GAME TABLE

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FIG. 1



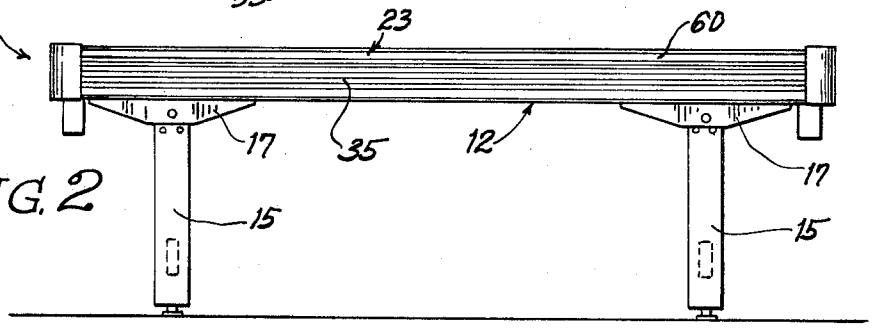


FIG. 2

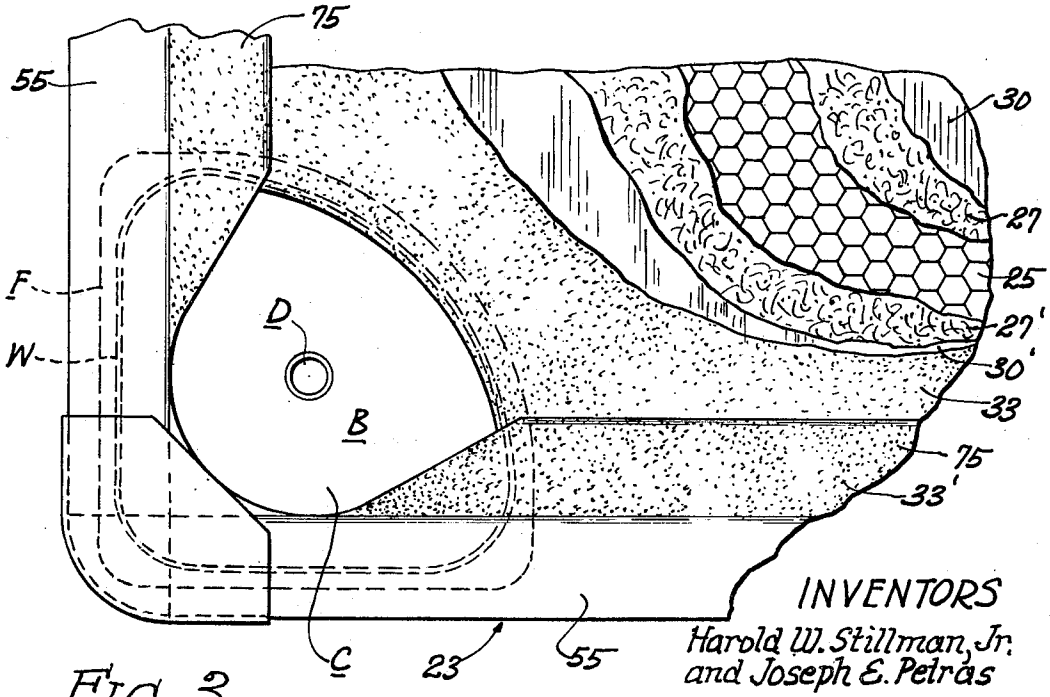


FIG. 3

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WEATHER RESISTANT GAME TABLE

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FIG. 4

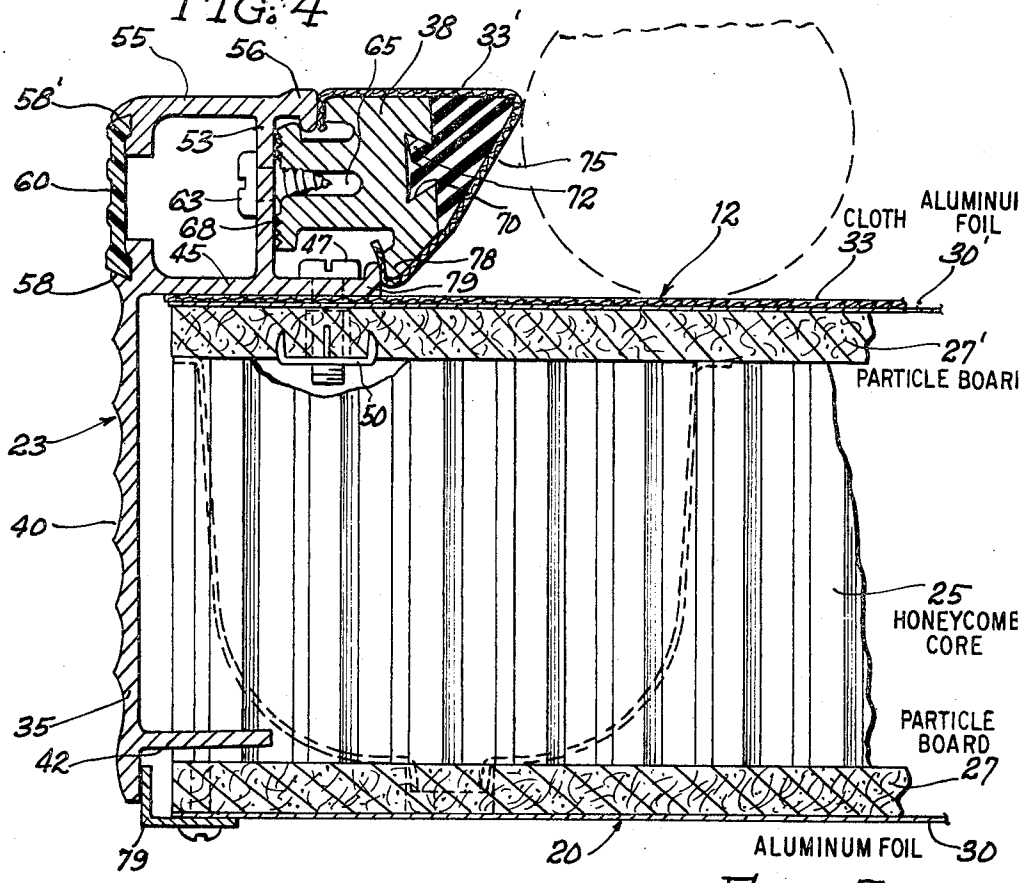


FIG. 5

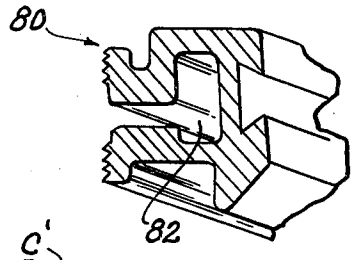


FIG. 6

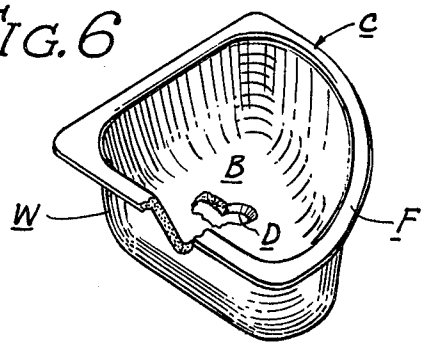
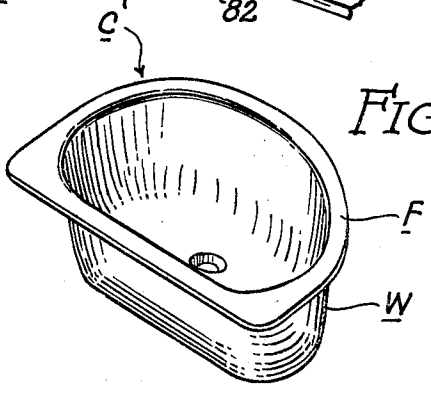


FIG. 7



United States Patent Office 3,489,410 Patented Jan. 13, 1970

3,489,410

WEATHER RESISTANT GAME TABLE

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Filed Oct. 25, 1967, Ser. No. 677,925
Int. Cl. A63d 15/00
U.S. Cl. 273—7 13 Claims

ABSTRACT OF THE DISCLOSURE

A game table, specially designed for outdoor use, comprising various parts cooperating to be resistant to deteriorative effects of light, moisture and temperature variations. Said table includes, as a bed, a laminated structural member comprising a moisture-resistant honeycomb core faced top and bottom with inflexible sheeting such as particle board, the latter having aluminum foil attached to their outside faces, the various laminations being preferably attached to each other by waterproof cement. The rail is also specially designed to cooperate with the bed and cloth, being preferably formed of extruded aluminum, protecting the bed against ingress of moisture. The cloth also is specially prepared to be resistant to light and moisture.

Our invention relates to game tables, and has to do more particularly with a table designed for a game such as pool or billiards, and is intended primarily for outdoor use.

BACKGROUND

Tables of this general character are old, as exemplified, for example, by the patent to Horton No. 3,323,797, granted June 6, 1967. However, so far as we are aware, no game table of this type has been designed especially for outdoor use.

SUMMARY OF THE INVENTION

A particular object of our invention is to provide a table of the character referred to which is so designed and constructed as to be substantially immune to deterioration from moisture and light.

Another object is to provide a table having a bed of novel construction which is relatively light in weight, strong, with a hard surface, will have an optimum strength-to-weight ratio and is dimensionally stable, heat-reflective and corrosion-resistant, so as to be immune to changes in humidity. Said bed has value also as a structural element, apart from a game table.

More particularly, our improved bed comprises a moisture-resistant, low-density core, such as a honeycomb, a hygroscopic sheet material such as particle board having a relatively low modulus of elasticity and strength bonded to each side of the core, and non-hygroscopic thin foil of metal which is resistant to expansion from moisture absorption and having high strength and hardness bonded to the outer faces of said sheets. Said foil, in the thickness employed in relation to the thickness of said sheets, resists the elongation of the sheets by reason of the high tensile and compressive strength of the foil and its high modulus of elasticity. The horizontal shear strength at the interface between the foil and sheets is sufficient to transfer stresses due to differential thermal and humidity movements. The foil is preferably either of corrosion-resistant metal such as aluminum, or is treated, to resist corrosion, such as a coated steel foil, and serves as a vapor barrier protecting the core and sheets.

Still another object is to provide a table of the type referred to which is light in weight and may be collapsed for convenient storage and shipment.

Another object is to provide, in a table of the type referred to, a bed, rail, pockets and a fabric for the playing surface, all specially designed for the objectives hereinabove outlined.

Still another object is to provide a table of the type described which is designed to be produced most economically so as to be available for mass distribution, and at the same time exceptionally rugged, long-lived and generally satisfactory.

Various other objects and advantages will be pointed out as the description proceeds.

Referring now to the drawings forming a part of this specification and illustrating a preferred embodiment of our invention,

FIG. 1 is a top plan view of a game table embodying our invention, with parts broken away for added clearness;

FIG. 2 is a side elevation thereof;

FIG. 3 is a fragmentary plan view, on an enlarged scale, of a corner portion of the same table, again with parts broken away;

FIG. 4 is a fragmentary sectional view, also on an enlarged scale, taken substantially along the line **4—4** of FIG. 1;

FIG. 5 is a perspective view, partly in cross section of a modified form of inner rail element;

FIG. 6 is a perspective view of an improved corner pocket constituting a feature of our invention, and

FIG. 7 is a perspective view of an improved side pocket.

Referring first to FIGS. 1 and 2, numeral **10** designates in general a game table embodying our invention, comprising a playing portion **12** supported by legs **15** pivotally connected by brackets **17** to playing portion **12**.

Turning to FIG. 4, playing portion **12** comprises a bed portion **20** and a rail portion **23**.

BED

The bed, according to our invention, realizes our objectives in being of light weight, hard surface, moisture impervious, and having an optimum strength-to-weight ratio and dimensional stability.

Thus, the bed **20** comprises a so-called honeycomb section **25**, formed of fluted kraft paper impregnated with a suitable moisture-resistant material such as a phenolic resin, the flutes or air cells extending vertically in generally parallel relation. Said section **25** may have a thickness of the order of about three inches, the cells varying in diameter from approximately one-half inch to one inch. Secured as by waterproof adhesive to the top and bottom of the honeycomb section are panels **27**, **27'**, say a ⅜ inch panel of a well known material known as particle board, consisting of compressed and compacted wood fibers, said panels being hard-surfaced and relatively inflexible. Alternatively, we may use for panels **27**, **27'** a material known as hardboard, which is a more highly compacted fibrous material and thus may be used in thinner panels.

Adhesively attached to the outer faces of panels **27**, **27'** are sheets **30**, **30'** of metal foil. For this purpose we preferably employ an aluminum foil of the order of approximately four to eight mils (0.004–0.008 inch) in thickness and of maximum hardness.

The foil sheets **30**, **30'** provide a number of highly desirable qualities. Thus, they are substantially immune to corrosion and are of light weight as compared with a steel foil of comparable thickness, which might also

be employed if given a suitable corrosion-resistance treatment.

Such foil elements provide structural reinforcement against dimensional changes in the particle board which might result from the presence of atmospheric moisture, which is particularly important in outdoor use for which the invention is primarily intended. Furthermore, said foil elements provide adequate support for rail and pedestal connection, as hereinafter described. The upper foil element **30'** provides a hard surface underlying cloth **33** which may be adhesively secured to said foil **30'** and providing the playing surface of the table.

CLOTH

Cloth **33** is of a character designed to be especially suitable for our purposes. This cloth must be relatively strong, have adequate abrasion resistance and be especially suitable for outdoor use in that it is highly stable against moisture and ultraviolet light.

Said cloth comprises a scrim preferably formed of a suitable synthetic fiber such as polyester, having relatively high strength and modulus of elasticity, and low dimensional changes resulting from temperature-humidity changes. Affixed to said scrim fabric is a facing fiber secured by a needle-punching operation and then bonded to the scrim as by a suitable adhesive or solvent.

Said facing fiber is preferably a suitable solution-dyed batt of synthetic fiber such as an acrylic which is highly resistant to fading, dimensional changes or other deterioration on exposure to ultra-violet rays.

We preferably employ a scrim of about 220 denier of synthetic fiber yarn marketed as "Dacron" polyester fiber by E. I. du Pont de Nemours & Co., about 24 ends per inch x 20 picks per inch.

The facing material, needle-punched on a conventional machine, is preferably a blue-solution-dyed batt of synthetic fiber marketed by Chemstrand as "Acrilan" acrylic fiber, 3 denier per filament, two inches long.

The composite fabric is finished, padded through ethylene carbonate dissolved in water, dried, cured, scoured and semi-decated in accordance with standard practice, to provide a felted surface texture.

The needle-punched felt construction just referred to produces a face texture simulating a high-priced all-wool cloth as employed in the most expensive billiard tables. A polyester type of scrim is especially desired because of its high resistance to weather.

RAIL

The rail, indicated generally by the numeral **23**, is also especially designed to be dimensionally stable against environmental changes, as from sunlight and moisture, making it especially suitable for exterior use. Said rail, for the most economical production and most effective design, is preferably formed of extruded aluminum, permitting ideal placement of material to permit attachment of the bed and cushions simply and accurately and with minimum tolerance requirements.

Rail **23** may most conveniently be an assembly of two major aluminum extrusions, viz, a major outwardly facing rail member **35** and a minor inwardly facing rail member **38**. Major rail member **35** has a relatively thin, plate-like skirt portion **40**, normally disposed in a generally vertical plane covering the lateral edge of bed **20** and having an integral flange **42** extending inwardly and substantially normally from the lower portion of skirt portion **40** and seated within a groove formed in honeycomb member **25**.

Another integral flange **45** parallel to flange **42** extends inwardly of the skirt portion, overlying cloth **33**, a plurality of apertures being disposed in flange **45** through which extend screws **47** which pass completely through cloth **33**, foil **30'** and panel **27'**, being secured below the latter by nuts or other suitable retaining members **50**.

Integral with flange **45** is an upstanding, generally T-shaped section **53** including a top flange **55**. Opposed and vertically spaced dovetail seats **58**, **58'** are formed at the upper extremity of skirt member **40** and flange **55**, respectively, seating an ornamental flexible finishing strip **60** preferably formed of a suitable material such as molded rubber or synthetic plastic, which may be snapped into place or slid in from one end.

Horizontally spaced apertures are provided in the upstanding portion of T-shaped member **53** adapted to receive screws **63** which adjustably retain inner rail member **38**. The latter has a plurality of horizontally spaced bores **65** seating screws **63**, whereby rail member **38** may be adjustably secured to the outer rail member. Serrations **68** may be provided on the outer face of rail member **38** for biting into the vertical leg of T-shaped member **53** to improve the seating of the inner rail to the outer rail member.

It is preferred that the inner and outer rail members be of slightly different degrees of hardness, which can readily be arranged in the alloying and fabrication of the aluminum rail members in a manner well known to those skilled in the metallurgical art, the inner rail member being preferably somewhat harder than the outer rail member. Thus, by reason of this differential in hardness, the teeth **53** formed on the inner rail member will readily bite into the opposed surface of the outer rail member.

Inner rail member **38** is provided on its inner face with a dovetail recess **70** serving to seat a correspondingly shaped flange **72** of a resilient bumper **75** formed of molded rubber, synthetic rubber or the like.

A strip of cloth **33'** extends around bumper **75**, overlying and adhesively attached to the top of inner rail member **38**. Said cloth **33'** also extends downwardly over the sloping face of a lip **78** formed on said inner rail member and is adhesively attached thereto.

By reason of the adjustability of the inner rail member relative to the outer rail member, the former may conveniently be repositioned whenever desired, without major disassembly of the table, in order to assure that the bumper **75** is at the desired critical elevation to provide optimum ball rebound.

FIG. 5 shows a modified form of inner rail member **80** which is substantially similar in design to the corresponding member **65** shown in FIG. 4, except that in this case a longitudinal cavity **82** is provided, resulting in a substantial saving of metal and corresponding reduction in cost and weight.

At the bottom edge of the bed is secured, as by screws, an angle member **79**, extending entirely around the bed preventing ingress of moisture and providing an attractive finish below skirt **40**.

POCKET MEMBERS

For pockets we have provided especially designed cups which are specially molded of a suitable plastic or the like and constructed and arranged to prevent passage of moisture into the bed, and more especially the core thereof. Said cups are waterproof in themselves and are provided with drain openings, whereby moisture is unable to collect therein.

FIGS. 6 and 7 show, respectively, a corner cup C and a side cup C'. It will be noted that both cups include a top, generally horizontal flange portion F from which depends a wall portion W which slopes downwardly and inwardly to a bottom wall B, the latter also sloping downwardly toward a drain opening D. Said drain opening is defined by a depending neck which is adapted to seat in panel **27** of the bed, the latter being bored along with foil sheet **30** to permit any liquid which might enter the cup, as from precipitation, to discharge outside of the table.

It will be seen that we have provided a game table for use out of doors embodying a combination of a number of features carefully designed to render the table especially resistant to the usual deteriorating effects of temperature and humidity changes, precipitation, etc.

Various changes coming within the spirit of our invention may suggest themselves to those skilled in the art; hence, we do not wish to be limited to the specific embodiments shown and described or uses mentioned, but intend the same to be merely exemplary, the scope of our invention being limited only by the appended claims.

We claim:

1. In a portable weather-resistant game table for outdoor use,
   (a) a main table body forming a playing portion comprised of a light-weight laminated bed comprising
   (b) a honeycomb core,
   (c) a relatively inflexible light-weight panel of compacted fibrous material disposed on each of the opposite sides of said core,
   (d) a relatively hard, corrosion-resistant metal foil on the order of 4–8 mils thick on the outer face of each of said panels,
   (e) a highly light and moisture resistant pliable cloth affixed to the upper metal foil to provide a playing surface on the top of said bed and substantially coextensive with the latter,
   (f) said core, panels, foils and cloth constituting said laminated bed affixed to each other by means of a waterproof adhesive cement, and
   (g) a rail portion encompassing and secured to said bed and comprising a metallic skirt surrounding, in sealing relationship, the lateral boundaries of said table body for excluding the entry of moisture thereto.

2. A game table as in claim 1, wherein
   (a) said panels are of the nature of particle board and
   (b) said foil is a relatively hard aluminum.

3. A table as in claim 1, having a ball-receiving moisture-impervious cup, having
   (a) integral means seating said cup in the bed so as substantially to prevent passage of moisture into the bed around the cup,
   (b) said cup also having integral means for draining fluid out of the cup below the bed.

4. In combination with a table as in claim 1, a ball-receiving receptacle molded of moisture-resistant material and having side and bottom walls,
   (a) a peripheral flange extending laterally from the side walls, seating said cup in the table, and also having
   (b) a drain opening in the bottom wall, with a neck portion defining said opening for conducting moisture out of the bed.

5. A game table as set forth in claim 1, wherein said metallic skirt is provided with a pair of inwardly directed flanges, the upper one adapted to superpose the edges of the playing cloth and the laminations therebelow and the lower one adapted to extend into the body of the core adjacent the bottom thereof.

6. A game table as set forth in claim 5, including a marginal angle frame secured to the edges of the bottom metal foil and abutting against the lower margins of said metallic skirt.

7. A game table as set forth in claim 1, wherein said metallic skirt is provided with integral channeling at the top thereof comprising

   (a) an integral inwardly directed horizontal flange for superposing the edges of the playing cloth and the laminations therebelow, and
   (b) a T-shaped section including a vertical member extending upwardly from an intermediate portion of said flange, said inner portion of said last-mentioned flange provided with apertures, and fasteners extending therethrough to interconnect said flange with the cloth, foil and panel at the upper portion of said bed.

8. A game table as set forth in claim 7, wherein said rail portion includes a detachable rail affixed to the inner face of said vertical member of said T-shaped section at an adjustable elevation, and said channelling at the top of said metallic skirt having an access slot for fasteners operable outwardly from the table and adapted to interconnect said detachable rail to said vertical member.

9. A game table as set forth in claim 8, wherein said access slot is fitted with a detachable trim strip.

10. A game table as set forth in claim 8, wherein said rail portion together with its channelling and detachable rail, is constituted by lengths of extruded aluminum.

11. A game table as set forth in claim 10, including resilient bumper means affixed to the outer portion of said detachable rail.

12. A game table as set forth in claim 10, wherein the detachable rail is slotted longitudinally at the inner face adapted to be juxtaposed to the outer face of the vertical member of the T-shaped section, to receive the fasteners therein, and longitudinal serrations on said inner face above and below said slot therein to facilitate positive positioning of said parts.

13. A game table as set forth in claim 12, wherein said detachable rail is provided with a longitudinal recess of dovetail section, a resilient bumper having a longitudinal projection of a cross-section corresponding to that of said dovetail recess, for interengagement with said recess, and a light and moisture resistant cloth adhesively applied to the outer surfaces of said metallic rail and resilient bumper with the edges thereof adapted to be clamped between the juxtaposed free edges of the channelling and detachable rail at the top and bottom of the assembly.

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