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L. D. KLEIN

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MODULAR SILL ELEMENT

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FIG. 2

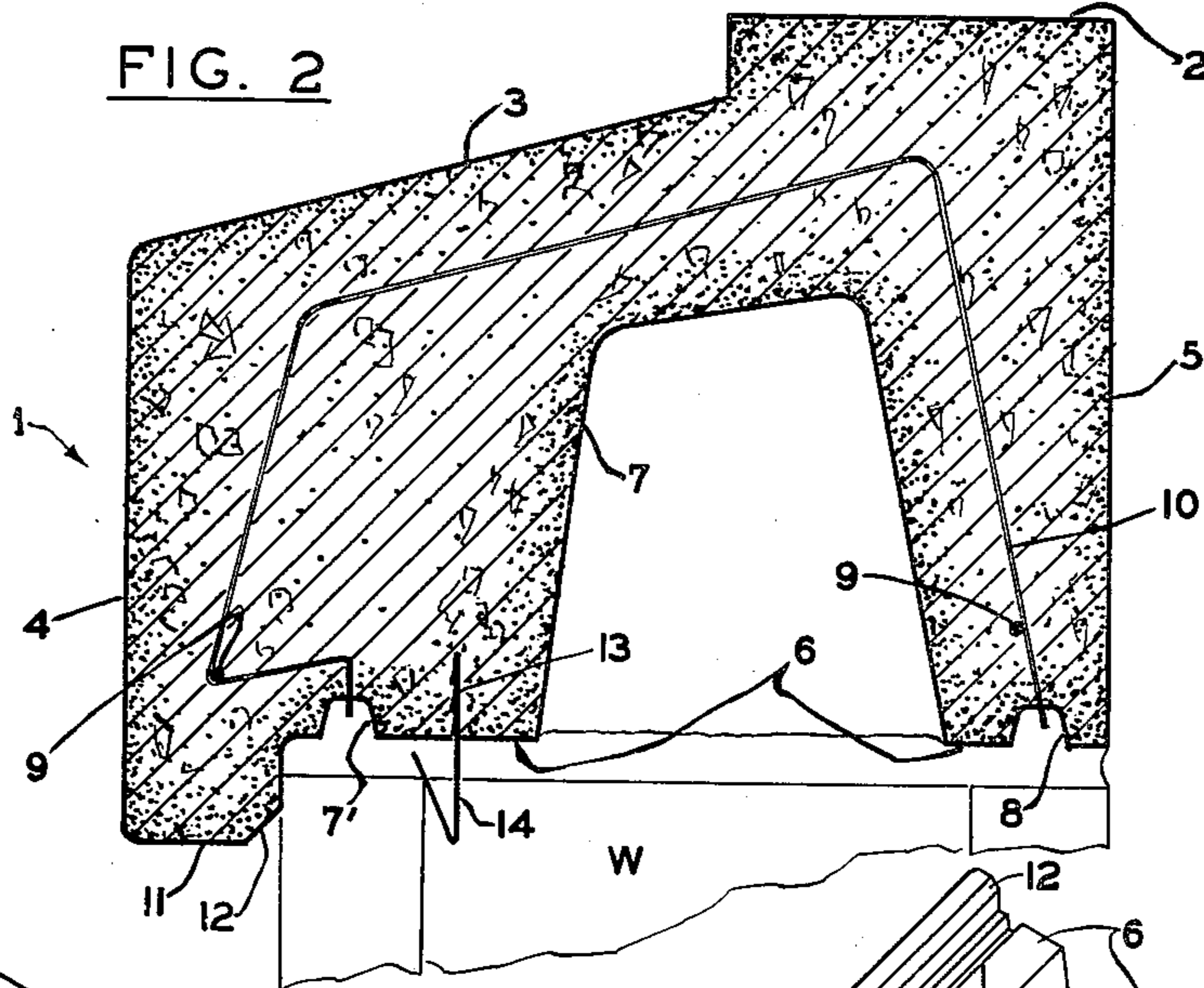


FIG. 1

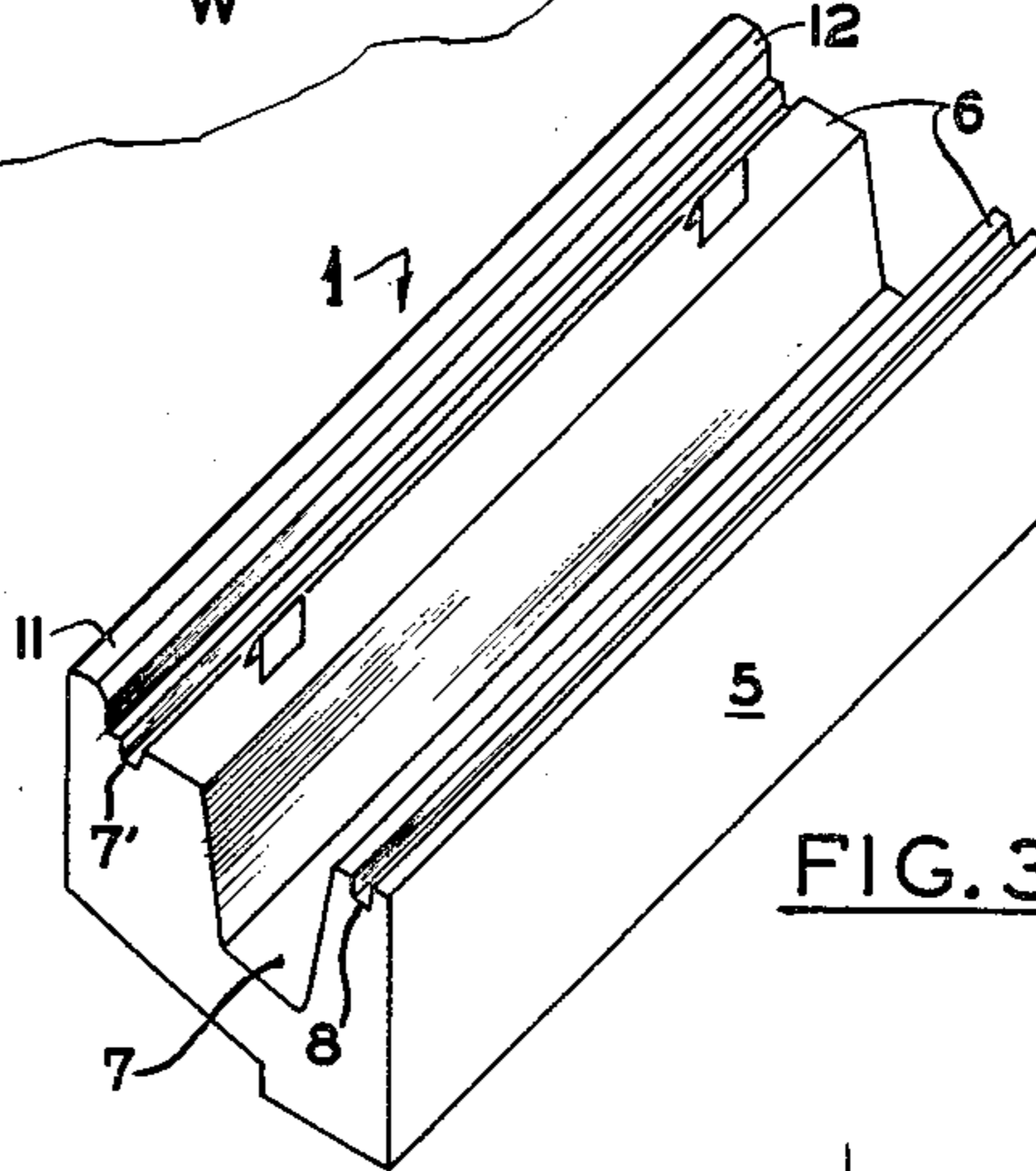
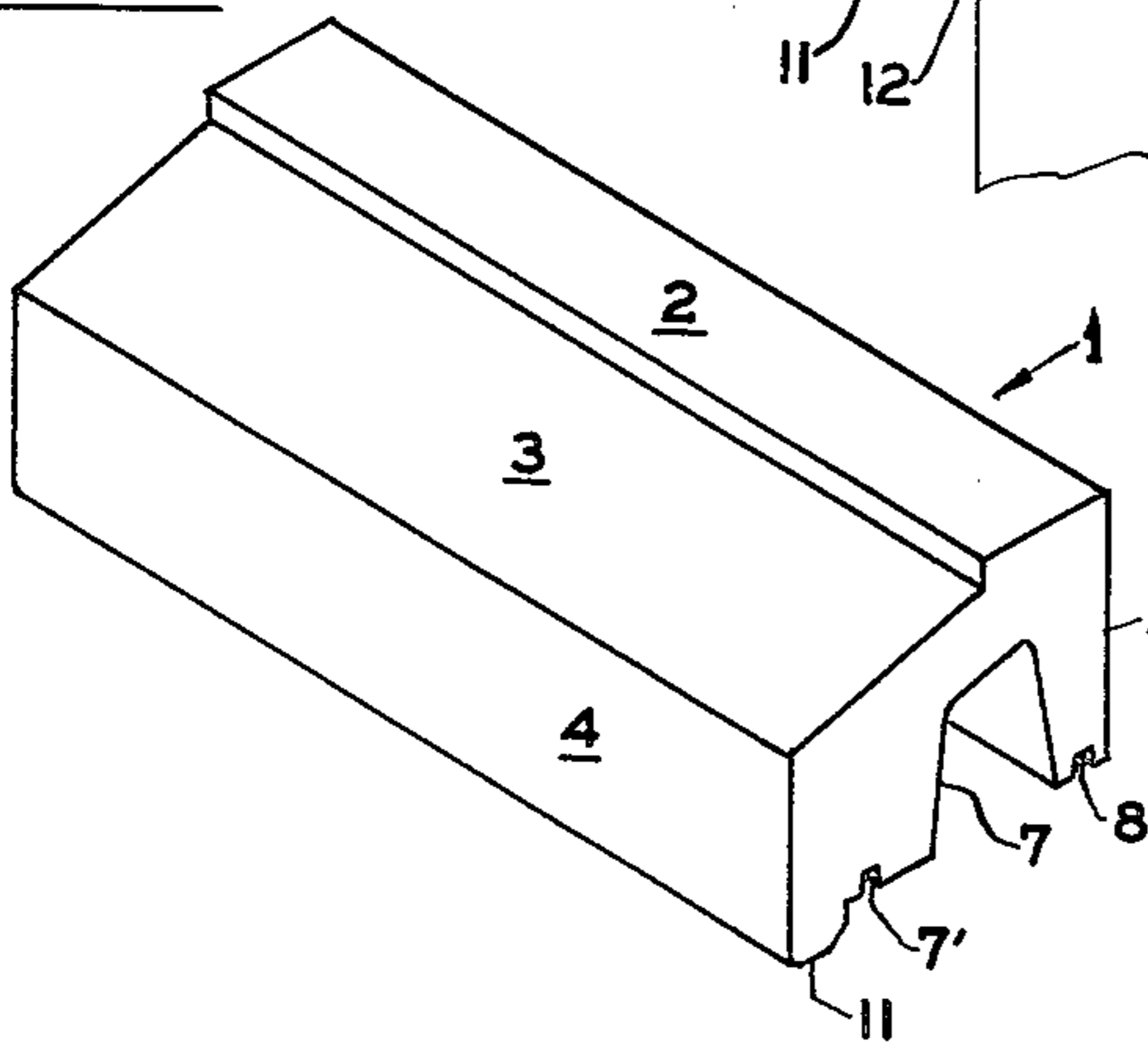
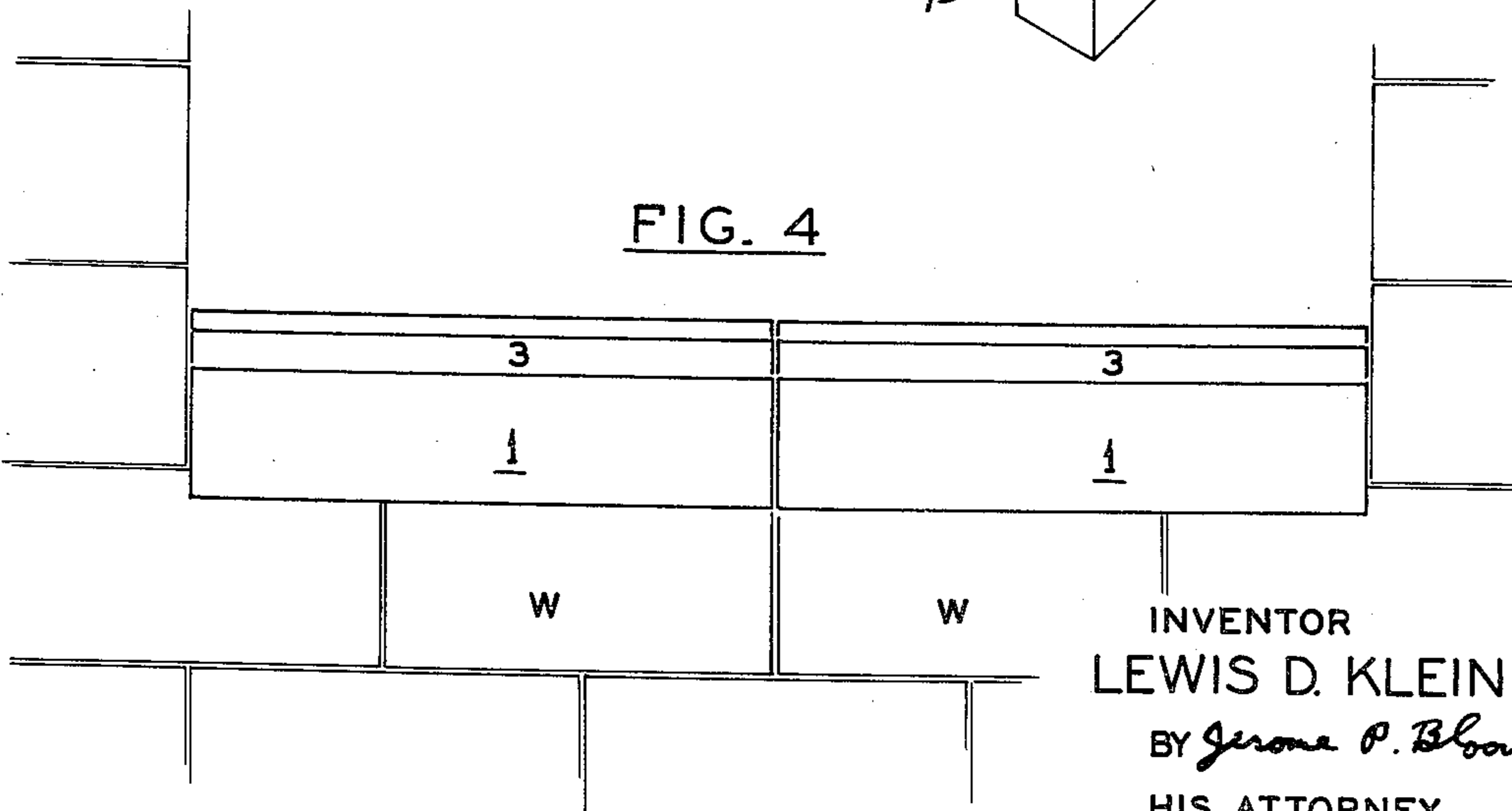


FIG. 3

FIG. 4



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## MODULAR SILL ELEMENT

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4 Claims. (Cl. 50-118)

This invention relates to a new and novel precast concrete sill unit element which is novelly improved in form and of a lightweight construction such as enables a ready and easy application thereof in various forms of building construction. This invention further and novelly contemplates the fabrication of sill elements of a modular nature to effect a new simplicity in the art in the fabrication of sill units and installation thereof in any modular opening, regardless of size or location thereof, thus promoting a distinct advance in the art.

Prior art type sill elements generally have the disadvantages of being cumbersome to handle or else so formed as to be subject to fracture in the handling thereof. Also the art is in such a stage that none of the previous sill units have been so fabricated to avoid any trim or adjustment thereof in the fabrication thereof unless custom made. In addition the prior art sill elements have always presented a problem of alignment where the sill unit is to be formed of a number of elements. The invention was developed to not only provide the answer for such problems but to set new standards for fabrication of sill elements so as to simplify the multitude of construction problems relative thereto and provide a new and highly improved sill element and unit construction.

The novel sill element presented herein effectively utilizes precast concrete in an improved form of sill element as to effect a substantial reduction in cost thereof in comparison to the cost of sill elements of the prior art. Also with a decreasing cost there is also an increase in quality thereof effected, a minimum of material being used in fabrication so as to obtain the maximum advantage therefrom in application. The improved sill element includes improved alignment features in fabrication of a sill unit as well as novel improved anchoring features in conjunction with other features which enable a cleaner better finished sill unit with a minimum of handling and a minimum of labor involved.

The invention further contemplates the fabrication of the novel sill element in critical size to enable greater building efficiency and a reduction of cost thereof where the sill unit is to be effected in an opening which is modular in nature.

An object of the invention is to provide a new and novelly improved precast concrete sill element.

Another object of the invention is to provide an improved sill element having a self-aligning feature which greatly simplifies the fabrication of sill units, reducing the handling of the elements thereof to a minimum.

A further object of the invention is to provide a new and novel standard for the fabrication of sill elements for multi-purpose application in building construction, effecting the first true modular sill elements which renders the fabrication of sill units, regardless of size or shape, easy and simple in nature and relatively inexpensive.

An additional object of the invention is to provide an improved sill element having novel anchoring features that enable a sure and positive seating thereof in use.

Another object of the invention is to provide a new and novelly improved sill element including means whereby uniform sill projection may be effected in use in a minimum of time and with a minimum of effort.

A further object of the invention is to provide a new and novel lightweight precast concrete modular sill element.

The objects as presented are but general and other and also more specific objects and advantages of the inven-

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tion will become readily apparent to those versed in the art from the following description thereof taken in conjunction with the accompanying drawings wherein:

FIG. 1 shows the novel sill element constituting the subject invention in a generally perspective fashion.

FIG. 2 shows a detailed cross-sectional view of the sill element as shown in FIGURE 1.

FIG. 3 shows in a perspective view the nature of the details of the under surface of the improved novel sill element.

FIG. 4 shows a sill unit as effected by the use of the novel modular sill elements.

The nature of the invention can best be presented and observed with reference to the accompanying drawings wherein a practical embodiment thereof is illustrated. The improved sill element is identified generally therein by the numeral 1. As can be seen in FIGURE 2 of the drawings, the sill element 1 has a cross-sectional form including a stepped upper surface providing a seating shoulder 2 and a lower and downwardly inclined drain surface 3. The front and rear faces 4 and 5 of the sill element 1 respectively are vertically arranged and flat in surface. The undersurface of element 1 has a deep recess longitudinally arranged therein which recess 7 effects a shell-like shape to the element. Arranged longitudinally in parallel fashion and spaced to either side of the recess 7 are anchor grooves 7 and 8. Precast into the element 1 are longitudinally arranged reinforcing rods 9 adjacent the lower surface 6. Also connected to the rods 9 transversely thereof are anchor rods 10 as seen in FIGURE 2 of the drawings which are spaced longitudinally of the rods 9 and so formed to have the extremities thereof extend into the respective anchor grooves 7 and 8 so as to anchor into the mortar on seating of the sill element. The front face of the element 1 depends beyond the undersurface 6 thereof to form a projection 11 which is substantially rectangular in cross-section. The lower inner corner of this projection 11 has a sharp bevel as at 12 to provide a drip in conjunction with the wall on which the element 1 is to seat. The inner face of projection 11 forms a flat abutment surface. Also arranged in the undersurface 6 of element 1 in longitudinally spaced relation are lock recesses 13 which receive alignment clips 14 therein which are substantially J-shaped in nature with the projecting portion extending towards the abutment surface of projection 11. These clip elements are substantially rigid yet slightly resilient and preferably fabricated of metal or fiber for purposes to be described.

It is to be noted that the recess 7 has its inner surface so arranged as to be substantially parallel to the drain surface 3 of the element 1 so as to afford an easy hand grip of the element so as to facilitate handling thereof as well as reducing the weight and cost of the element 1.

As shown in FIGURE 2 of the drawings, in use the sill element 1 is seated on a wall W which has had mortar applied thereto in the usual manner. In application the element 1 is easily grasped by the hands engaging the ends at the recessed section 7 to grip the drain surface 3 and the inner surface of recess 7 as is obvious from the drawings, particularly FIGURE 2 thereof. As the element 1 is brought down on the wall, the wall fits easily and quickly intermediate the inner abutment face of projection 11 and the alignment clips 14 for a positive ready alignment of the sill element. The projection 11 by its abutting and depending relation relative to the wall insures a uniform sill projection in the forming of a sill unit. The alignment clips in conjunction with the projection, since they are slightly resilient in nature, accommodate any irregularity in the wall yet they insure a quick positive aligned seating of the sill unit element 1 with a minimum of handling and no manual adjustment

necessary to effect a proper positioning of the element. As the sill element seats an effective drip is formed by bevel 12 in conjunction with the wall. Moreover, as the element 1 seats in the mortar, the anchor projections 10 which extend respectively into anchor grooves 7' and 8 effect a firm engagement with the mortar as it sets to provide a sure and positive anchoring of the sill element.

Thus, as can be readily seen from the illustrated embodiment of the invention, a sill element has been provided which, relative to the prior art, is exceptionally easy to handle because of its conformation as well as its relatively lightweight structure. Also an improved anchoring means novelly associated in the anchor grooves in the under surface of the element provides a sure and more positive and lasting construction. The projection 11 of the element effects a uniformity of sill projection giving a better construction effect. And the alignment feature effected by the arrangement of the alignment clips enables a quicker and more effective seating of the sill with a minimum of handling. Accordingly, as is obvious, a universally improved sill element results from the invention. However, the invention goes even further in that a modular sill element is presented which will adapt itself to the formation of a sill unit in any modular opening without any adjustment or trimming of the elements thereof in the process by the formation of the elements in critical size so as to reduce problems in construction and cost of sill units and promoting a new simplicity in the art of forming and handling sill elements for the market.

It has been determined that by the fabrication of sill elements in two critical lengths of twenty and twenty-four inches that any modular opening can be precisely accommodated with no custom work or trimming of the finished sill elements necessary in use. For example, modular sash sizes range from 1'8" to 3'4", 4'0", and 5'00". Thus, the two critical sizes established can be used singly or in combination nominally and exactly afford the units which can effect any modular opening sill unit construction. This particular feature is far reaching and novel in the construction art as with reference to sill construction. By the employment and establishing of these critical sizes reduced fabrication costs for sill units and accordingly reduced construction costs as is readily obvious to those versed in the art will obtain. Also, the novel modular critical sizes effected will enable design problems to be simplified relative to sill construction.

The invention presents a new and novel highly improved sill construction and a modular sill element with features providing a distinct advance in the art. And while a specific embodiment and application of the invention has been presented herein, many other modifications and applications thereof will be readily apparent therefrom to those versed in the art and such is deemed to lie within the scope of this invention.

I claim:

1. A modular sill unit of concrete comprising a generally rectangular body having a stepped upper surface, the lower portion thereof being sloped to provide a drain, the upper portion of said stepped upper surface being substantially flat and rectangular in cross-section for seating a sash in closely abutting relation thereto, grooves in the undersurface of said body, reinforcing means in said body arranged both longitudinally and transversely thereof, said transverse reinforcing means having their extremities projected in said grooves, short of said undersurface, for anchoring in mortar received in the grooves, said sill unit being a basic modular unit of nominally twenty or twenty four inches only whereby when used singly or in combination the proper sill as-

sembly to fit any modular sash opening may be readily and quickly provided.

2. A modular sill element comprising, a body of generally rectangular shape, said body having a stepped upper surface with the lower portion thereof sloping downwardly and outwardly to provide a drain, the step therein providing a right angle cross-section to provide for seating a sash thereon in closely abutting relation thereto, a single depending extension on the front face of said body having an inner face at right angles to the under surface of said body to insure uniform sill projection on flush seating of the element to the top of a wall section, a bevel on said inner face at its depending extremity and recesses in the under surface of the body having anchor rod elements projecting therein and contained thereby so as to provide a firm positive anchoring of the sill element to mortar received in said recesses.

3. A modular sill element comprising, a generally elongated body of pre-cast concrete, said body having a stepped upper surface sloping in nature to provide a drain thereby, the stepping being effected by a vertical decline in said upper surface to provide for seating a sash thereon in closely abutting relation thereto, the undersurface of said body being provided with spaced mortar receiving grooves, reinforcing means transversely cast in arched fashion in said body to have the extremities thereof projected to said grooves for anchoring said body on seating said undersurface to mortar, a flange integral with the under surface of said body and depending therefrom at its front face to provide a plate-like abutment means to insure uniform sill projection on seating of said body and spaced flexible alignment means parallel with said depending flange having hook portions directed to said flange for resiliently engaging the front wall section of a hollow wall structure therewith on seating said body thereto.

4. A lightweight pre-cast concrete sill element including a body of elongated generally rectangular shape having a stepped upper surface, the uppermost portion being rectangular in cross-section and constituting an inner sill portion of a finished nature and the lower portion sloping downwardly and outwardly therefrom, means integrally connected to depend from the undersurface of said body providing automatic positioning means therefor, said body being provided with a longitudinal hollow substantially coextensive therewith the innermost surface of which is generally parallel to the said lower portion of the upper surface of said body, anchor recesses in the undersurface of said body to either side of said hollow, the automatic positioning means providing a depending flange at the outer edge of said body having a bevel at its depending extremity to its inner face, integrated reinforcing means transversely of said body arched to the general outline of the hollow in said body and resilient aligning means integrated in said body, to depend parallel to said depending flange and having portions projecting in the direction thereof for firmly cooperating therewith in positioning said sill element to a hollow structure.

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