

THE JOINT EXAMINATION BOARD

PAPER P6

INFRINGEMENT AND VALIDITY

13th November 2001

10.00 a.m. – 2.00 p.m.

Please read the following instructions carefully. This is a **FOUR HOUR** paper.

1. Write on one side of the paper only using **BLACK OR DARK BLUE INK**. You must write your examination number and designation of the paper in the top right hand corner of each sheet. You must not state your name anywhere in the answer.
2. **NO** printed matter or other written material may be taken into the examination room.
3. Answers **MUST** be legible. If the examiners cannot read a candidate's answer no marks will be awarded.
4. Candidates are reminded that marks are awarded for demonstrating an ability to select points for discussion and the reasoning displayed in reaching conclusions rather than the actual conclusions reached.
5. **NO** writing whatsoever, including numbering of papers, is allowed prior to the commencement of the examination or after it has finished.

Document check list :-

Client's letter (2 pages)

Document A : European (UK) Patent No. 0 800 000 (7 pages)

Document B : Client's advertising literature (2 pages)

Document C : Drawing of a toy brick (1 page)

13 PAGES INCLUDING THIS PAGE

CLIENT'S LETTER

Your client writes to you as follows:

Dear Sir,

I own a medium-sized brick factory in Bedfordshire and my family have been manufacturing bricks of many sizes and types for several generations. Some two years ago, with the upsurge in building, I hit upon an idea of improving the standard building brick in order to improve productivity. The idea was to make the bricks partially interlock so that an erected structure made from those improved bricks was more secure, improved the alignment of bricklaying, could be used with existing bricks of other manufacturers, and ensured a better bond between one course of bricks and another. I basically thought up this concept having seen, and played with, my son's Lego[®] set, toy building bricks with which I think everyone is familiar, and I thought that if they could do it in toy form, what was there to stop me from doing it for real. Some diagrams of my brick concept are enclosed, one of which shows how my bricks interlock with one another and with standard bricks. Although the diagrams are self-explanatory, I am also attaching a brief description of how my bricks are intended to be used. It's part of my advertising literature.

Bearing in mind where my idea sprang from, one thing I did do was to check if the basic Lego patent was in force. I found that it had expired and so I believed that there was no problem. I enclose a drawing of the typical Lego brick. It shows all that one needs to know. You will see that it is a similar principle to what I am doing. However, last Thursday, I received a letter from a firm of patent agents drawing my attention to the existence of a European (UK) patent 0 800 000 which I am told was granted two years ago for household bricks to a Dutch company who have a British subsidiary who manufacture in the UK; I know this company but I

CLIENT'S LETTER

have not seen any of these bricks or been aware of their existence. The patent agents sent me a copy of the patent which I am enclosing for you to advise me, and they require a reply within seven days of receipt of the letter, i.e. by next Thursday.

Yours sincerely

You check that European (UK) Patent No. 0 800 000 (Document A) is indeed in force in the UK and that no prior art was cited against it during prosecution. An on-line search of all the relevant databases reveals only the existence of the patent for toy building bricks mentioned by your client, a copy of the drawing of which is provided in Document C. Details of your client's bricks are shown in the short description and drawing in Document B which your client has also enclosed with the letter.

Advise your client as to his position and prospects on the issue of infringement of the patent and its validity.

Also mention what steps the patentee may take and the options open to both your client and the patentee.

DOCUMENT A

EUROPEAN (UK) PATENT NO. 0 800 000

PUBLISHED JULY 1997

GRANTED WITH GB DESIGNATION NOVEMBER 1999

IMPROVEMENTS IN OR RELATING TO BUILDING MATERIALS

This invention is concerned with improvements in or relating to building materials, and particularly with building units such as housebricks and the like.

In the prior art, there is one known form of housebrick **10**, shown in Figure 1 in section, i.e. as if it has been cut in half lengthwise, that has very small integrally-formed shallow dome-shaped projections **12** on the surface **14**, which is designed to be the upper surface. The projections are usually arranged in one central row or two rows side-by-side and are shallow and at most only 2 – 3 millimetres in height. The purpose of these projections is to ensure that, when bricks are laid and mortar sets over and between them, there can be no lateral slippage between the mortar and the brick below which has the projections thereon. Slippage can otherwise happen, if the brick is accidentally knocked, either when the mortar has not set hard (so that the bond between bricks is disturbed while the mortar is setting), or later if the mortar becomes brittle with age. The projections are intended to prevent this but are not intended to co-operate with the brick above.

The brick is made by traditional moulding and baking methods and has an undersurface **16** which is recessed, as shown at **18**, in a typical manner as with most bricks, to accommodate mortar when the brick is laid on top of an existing course of bricks. The recess **18** is usually elongate and has sloping side walls **20** and sloping end faces **22** which are triangular so that the recess is somewhat tent shaped. When such bricks are laid one upon another, with mortar in between them, the projections prevent lateral movement of one course of bricks on another because the mortar beds around the shallow dome-shaped projections **12** and is pushed up into the recess **18**

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to prevent slippage sideways either while the mortar is semi-fluid and setting or once the mortar has set.

There is also known a larger building element, known as a breeze block, usually made from sintered material or from concrete. Such a block is shown in Figures 2 and 3 (Figure 1 is to a larger scale than Figures 2 and 3) and which are end and side views respectively of the block in question. A breeze block is of larger dimensions than a standard brick, i.e. height and length though the width is the same, and, if made of sintered material, is usually used as infill or for partition walls where no load bearing is required and an exterior finish is to be applied. Such a breeze block has a ridge like projection **24** along one (i.e. top) edge and a corresponding recess or groove **25** along the opposing (i.e. bottom) edge so that adjacent breeze blocks can trap mortar between the ridge and the adjacent recess and so prevent slippage when the mortar has set. Only this type of element addresses alignment of building units but, of course, it is limited in its use.

Two of the biggest costs in building domestic houses are labour and the price of materials including mortar which basically consists of one part cement and three parts sand. The actual cost of applying mortar is both dependent upon the cost of the raw material and also that incurred in the time required to mix it. Often a less skilled person is required to keep making the mortar while the skilled bricklayer is engaged in laying the bricks. With current methods, an expert bricklayer can lay up to about 800 bricks an hour. Bricklaying is a specialised job and the artisan skilled bricklayer commands relatively high payment. Much of the skill lies in the ability to be able to lay bricks evenly and in proper alignment, i.e. straight and level, with the correct amount of mortar between the bricks, in any construction, and, of course, as quickly as possible. It is considered that with the present invention, it should be possible to lay even larger quantities of bricks and to some extent with less skilled labour, due to the need to use less mortar than with conventional bricks and due to the design of the bricks themselves which is largely self-aligning.

It is indeed an object of the present invention to provide an improved product which will go a long way to accomplishing these objectives to the extent that it will

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assist the accomplished bricklayer in laying bricks truly and more quickly. Furthermore, it will remove the occurrence, as can and frequently does occur, of a single brick being out of alignment and spoiling the appearance of a wall or building. It is thus also foreseen as an aid to the DIY enthusiast in assisting attainment of a more professional-looking structure than might hitherto have been possible.

Accordingly, the present invention provides a brick, suitable for construction of buildings, with an upper and lower surface, each of said surfaces of one brick being formed so as to co-operate with the said other surface of an adjacent brick such that an inter-lock is formed by placing one brick on top of a like brick.

The present invention also provides a building unit comprising a shaped block whose principal dimensions (i.e., length, width and height) match those of a known similar building unit, for use with similarly shaped blocks and arranged to be bonded thereto by the intermediary of building mortar between adjacent building units, the building unit being characterised by, on a surface intended to face an adjacent building unit, one or more raised projections for accommodation by one or more recesses in an opposed face of the adjacent building unit.

The projections can be of any suitable shape and may, most advantageously, be cylindrical, square or in the form of a truncated pyramid.

Figures 4 to 6 of the drawings show an embodiment of the invention by way of example, in which drawings, Figure 4 is a side view, Figure 5 is an end view and Figure 6 is a view of a several bricks according to the invention in assembled relation with mortar between them.

In Figures 4 to 6, there is shown a form of building brick **30** according to the invention, which, as regards its principal external dimensions, is of the same size as the known house brick. However, the bricks **30** shown in the drawings also comprise two integral bosses or projections **32**, formed on an upper surface **34** thereof, the purpose of which is both to ensure that they can be stacked ready for use without the stack shifting or falling over and to ensure that when they are laid on top of existing bricks in the usual way during building, they are in correct alignment, as hereinafter described.

DOCUMENT A

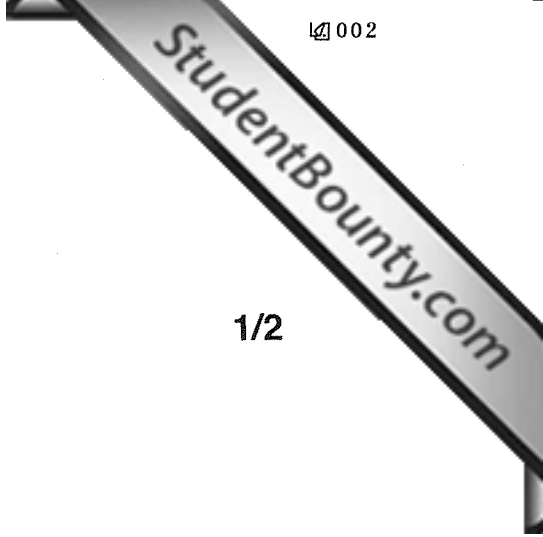
In the illustrated embodiment, these projections **32** are of truncated pyramid shape, although they may be rectangular or substantially cylindrical.

The underside, or bottom face of the brick, i.e. that face opposite the surface having the raised projections formed thereon, has two recesses **26** each of which is just large enough to accommodate a corresponding projection **32** of a brick which is underneath; of course the recess may be of other shape than that shown in the Figures to accommodate a correspondingly shaped projection. Each of the bosses **32** is formed around its side wall **34** with smaller projections **36**, of the same shape but significantly smaller dimensions than the larger projections **32**. These are so dimensioned that, when one brick is placed on another in stepped or staggered formation as is usual in building, with a layer of mortar between the two bricks, as is shown in Figure 6, the surface of the underside recess **26** of one brick is spaced apart from the surfaces of each of the projections to provide a space which can be filled with mortar. It can be seen that the space between the projections **32** and **36** and the corresponding recess **26** is less than that between two known bricks thus saving in mortar and, ensuring a physical interlocking of the bricks in the event of failure of the mortar, which latter event is particularly important in structures which are expected to stand the test of time. Furthermore, the projections fit well into the recesses of superimposed bricks and ensure good alignment. Each projection is sized so that the bricks can be used with standard bricks such as that shown at **38** in Figure 6 and so the positioning and size of the projections is such that the projections can be housed within the recess of a standard brick when a standard brick is laid as part of the uppermost course of a structure.

DOCUMENT A

CLAIMS

1. A brick, suitable for construction of buildings, with an upper and lower surface, each of said surfaces of one brick being formed so as to co-operate with the said other surface of an adjacent brick such that an inter-lock is formed by placing one brick on top of a like brick.
2. A building unit comprising a shaped block, of principal dimensions matching those of a standard known building unit, for use with similarly shaped units and with known building units and arranged to be bonded thereto by the intermediary of building mortar between adjacent building units, the building unit being characterised by, on a surface intended to support, in whole or in part, an adjacent building unit, a plurality of projections for location in one or more recesses on an opposed surface of a further building unit to locate the further building unit in situ and prevent lateral movement of one unit relative to another.
3. A building unit according to claim 2 wherein the unit is formed with at least two raised projections on said surface and a single recess on the opposed surface.
4. A building unit according to any of claims 2 to 3 wherein each of said one or more raised projections is generally cylindrical, square or in the form of a truncated pyramid.
5. A building unit according to any of claims 2 to 4 wherein the dimensions of the or each raised projection are such that when the unit is used with a like unit, with mortar between the two units, a space exists between the recess of one unit and around the projections of the other which can be filled with mortar such that, when the mortar has set, the projections serve to anchor adjacent building units together.



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EUROPEAN PATENT NO. 0 800 000

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Fig. 1.

(Prior Art 1)

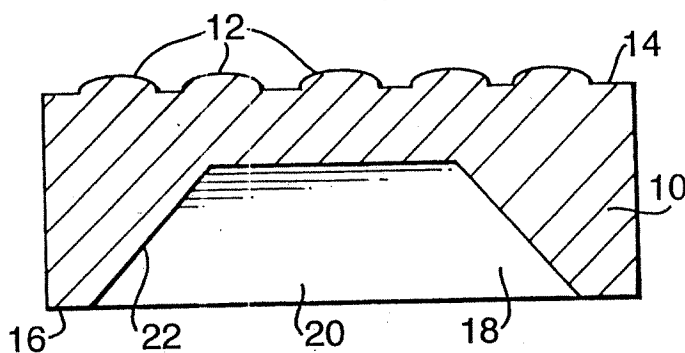


Fig. 2.

(Prior Art 2)

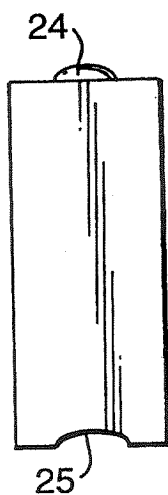
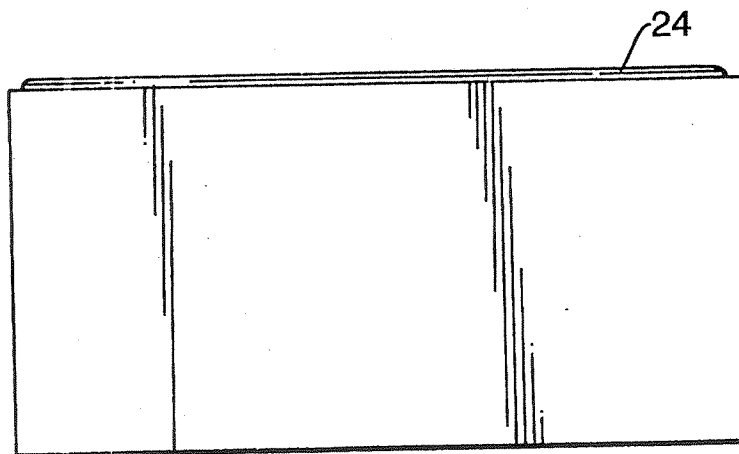
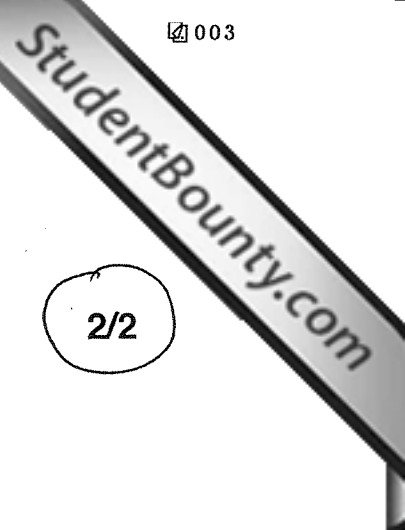


Fig. 3.

(Prior Art 3)





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Fig.4.

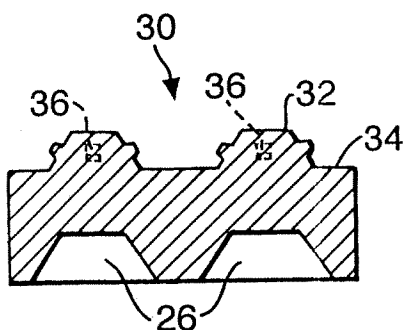


Fig.5.

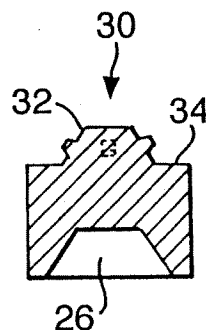
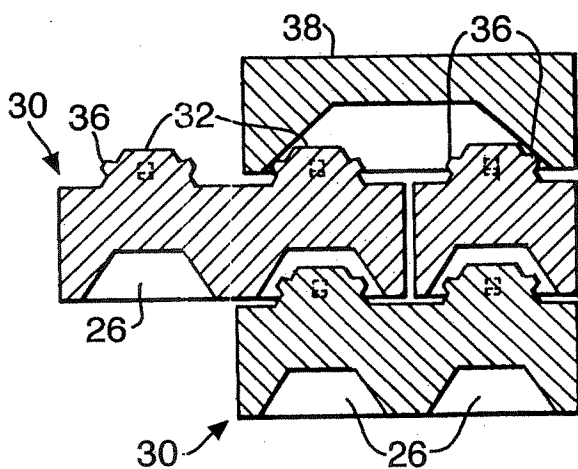
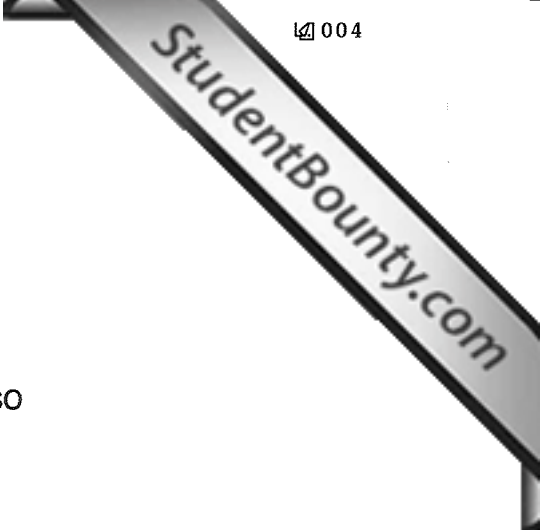


Fig.6.



S ELF ALIGNING BRICK

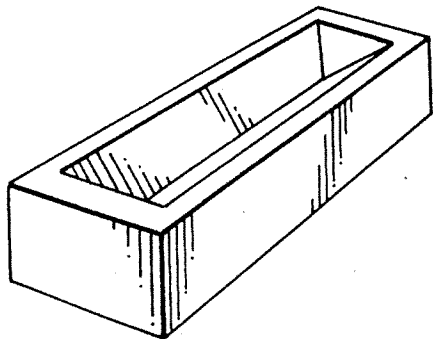
The SELF ALIGNING brick is designed for use with similar bricks and with existing or standard bricks. It has two projections on its upper surface and a recess, like standard bricks, on its undersurface. The projections are of such size and dimensions that they can be stacked one on top of another without risk of the stack toppling. At the same time, when they are laid in traditional fashion, the projections extend up into the recess of the brick above and assist with alignment of the bricks as they are being assembled as is shown in the following drawing. The projections also serve to force mortar up into the recess to fill the recess completely and thus improve the bond between the bricks. The following drawing shows the bricks stacked without mortar and in use with mortar in the recess around the projections.



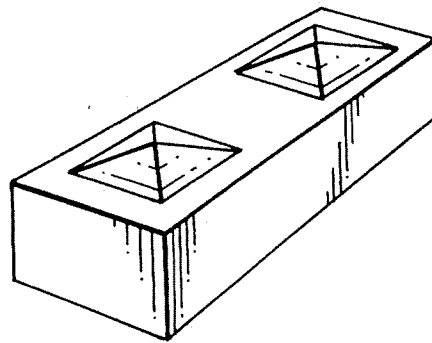
DOCUMENT B

SELF ALIGNING BRICK

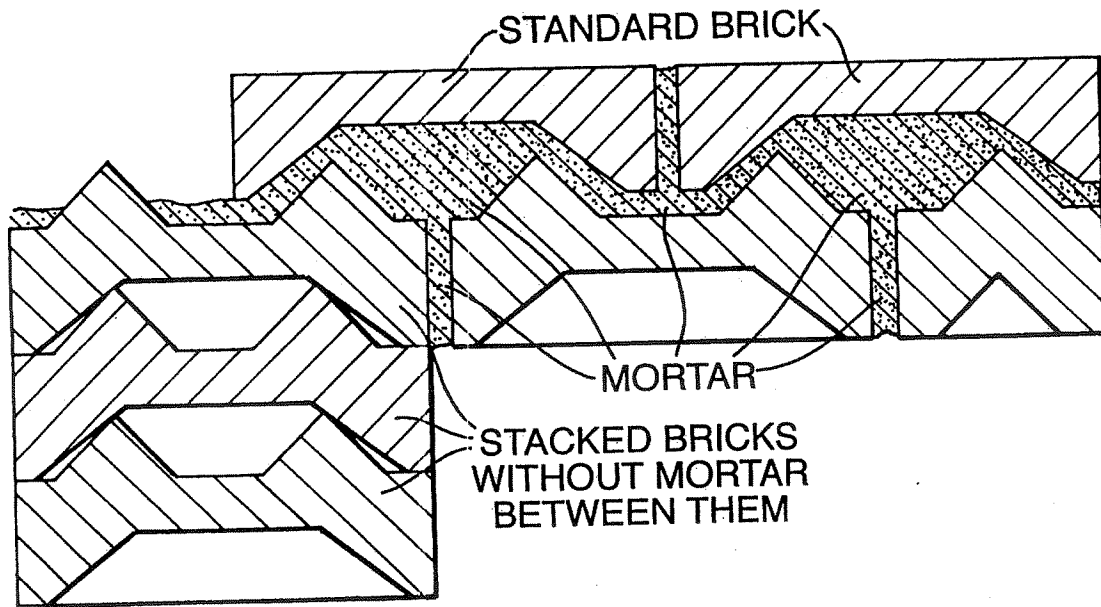
Figures showing self aligning brick and also showing it in use with standard bricks

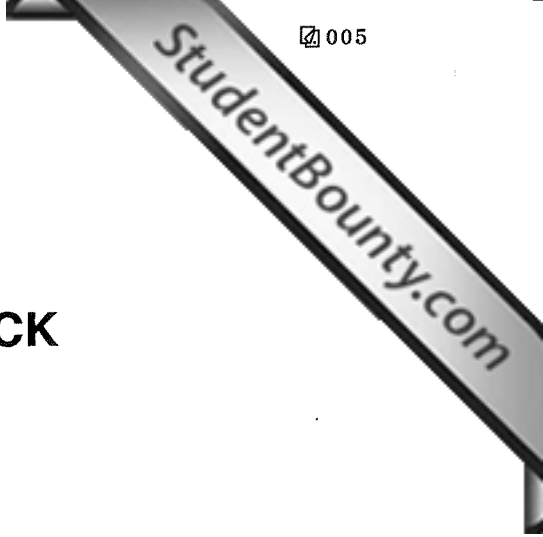


PERSPECTIVE
UNDERSIDE VIEW



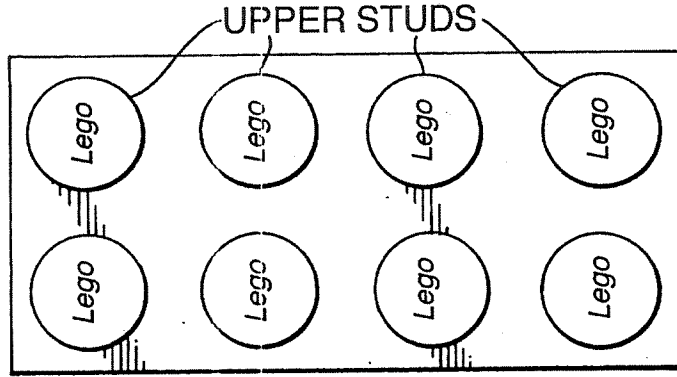
PERSPECTIVE
TOP VIEW





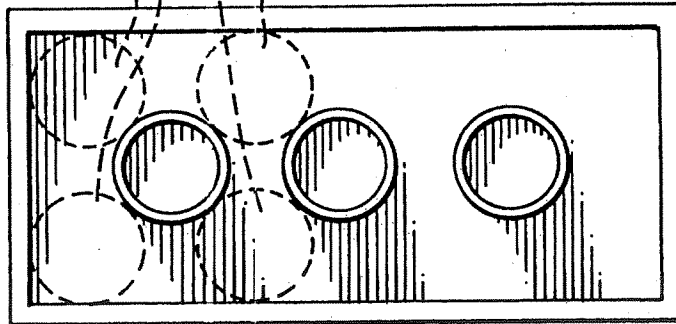
DOCUMENT C

SKETCH OF THE LEGO® BRICK

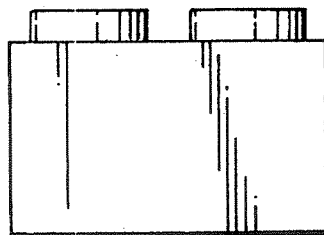


PLAN VIEW

POSITION OF UPPER STUDS BETWEEN UNDERSIDE PILLARS



UNDERSIDE VIEW



END VIEW