

(12) **UK Patent Application** (19) **GB** (11) **2470213** (13) **A**

(43) Date of A Publication

17.11.2010

(21) Application No: **0908282.7**

(22) Date of Filing: **14.05.2009**

(71) Applicant(s):
Patrick McCaul
Drumbilla House, Castleblaney Road,
Carrickmacross, Co Monaghan, Ireland

(72) Inventor(s):
Patrick McCaul
Breandan McAree
Tony McAree

(74) Agent and/or Address for Service:
PurdyLucey Intellectual Property
Suite 138/139, The Capel Building, Mary's Abbey,
Dublin 7, Ireland

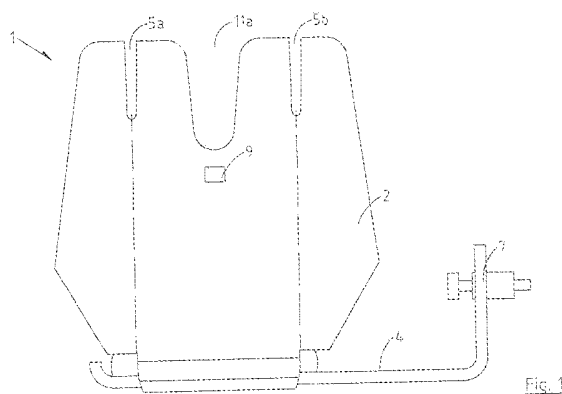
(51) INT CL:
B28D 1/26 (2006.01) **B28D 1/22** (2006.01)

(56) Documents Cited:
GB 2450744 A **GB 2258184 A**
GB 1509747 A **US 5722471 A**
US 1799173 A

(58) Field of Search:
INT CL **B28D**
Other: **Online: EPODOC, WPI**

(54) Title of the Invention: **Brick cutter device and method**
Abstract Title: **Channel shaped brick cutter**

(57) The invention provides a brick cutter device comprising a sheet of metal folded at two sides to define two side walls 2, 3 and a base 4, each side wall 2, 3 is adapted to provide an opening to receive a cutting member, for example a masonry bolster. An adjustable mechanism 7 at one end of the base 4 is adapted to support a brick, such that the mechanism 7 can be adjusted dependent on where the brick needs to be cut. A biasing means 8, for example a spring, positioned on one of the sidewalls 2, 3 provides a force on the brick to stabilise the brick, when said brick is placed on said base 4 before the brick is cut by said cutting member. In addition, the base 4 is kinked or folded to form a ridge in line with the opening. Preferably the adjusting mechanism 7 is a locking nut/ bolt that cooperates with the folded base 4. Preferably the device is formed from stainless steel. The side walls 2, 3 may have openings 5a, 5b to receive the cutting device.



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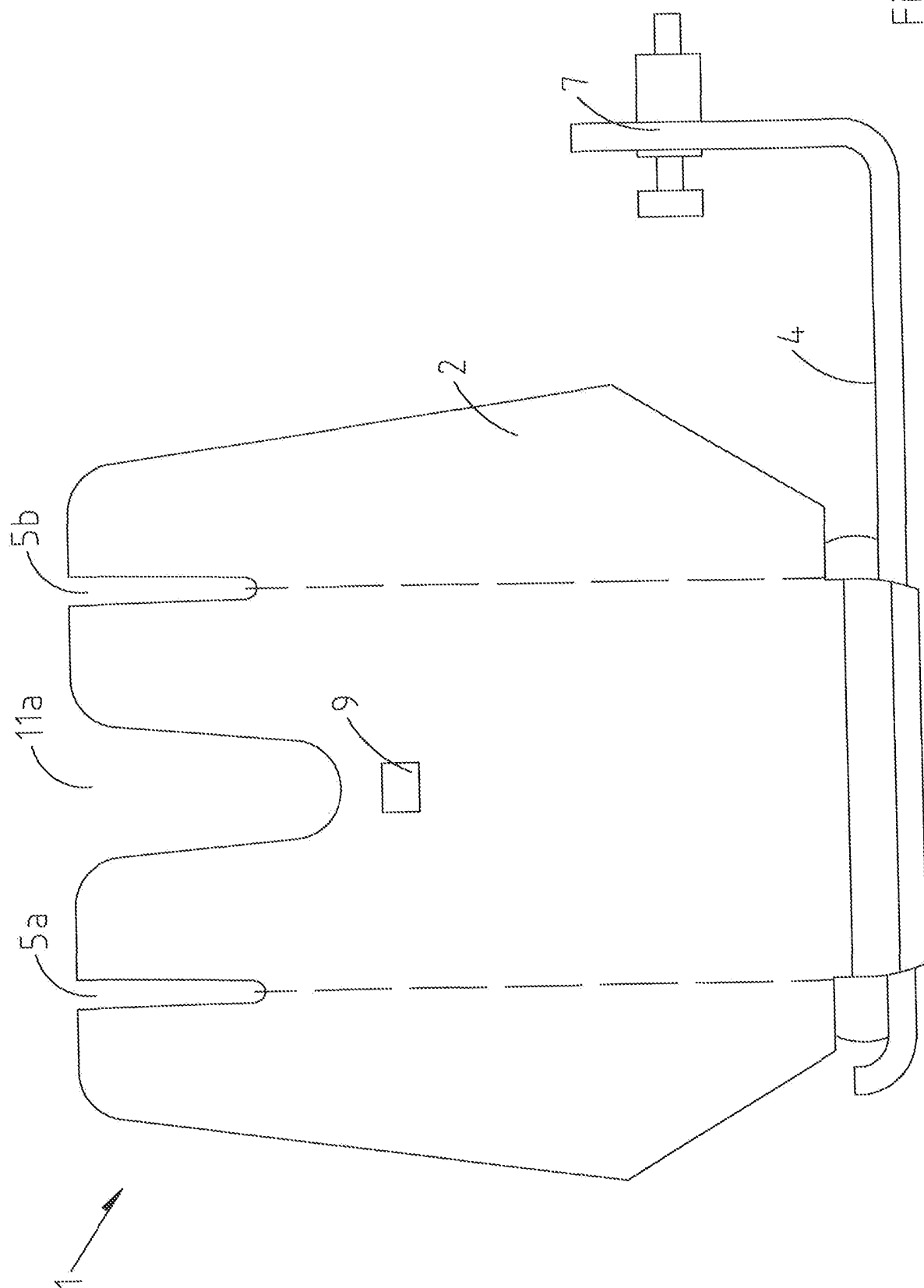
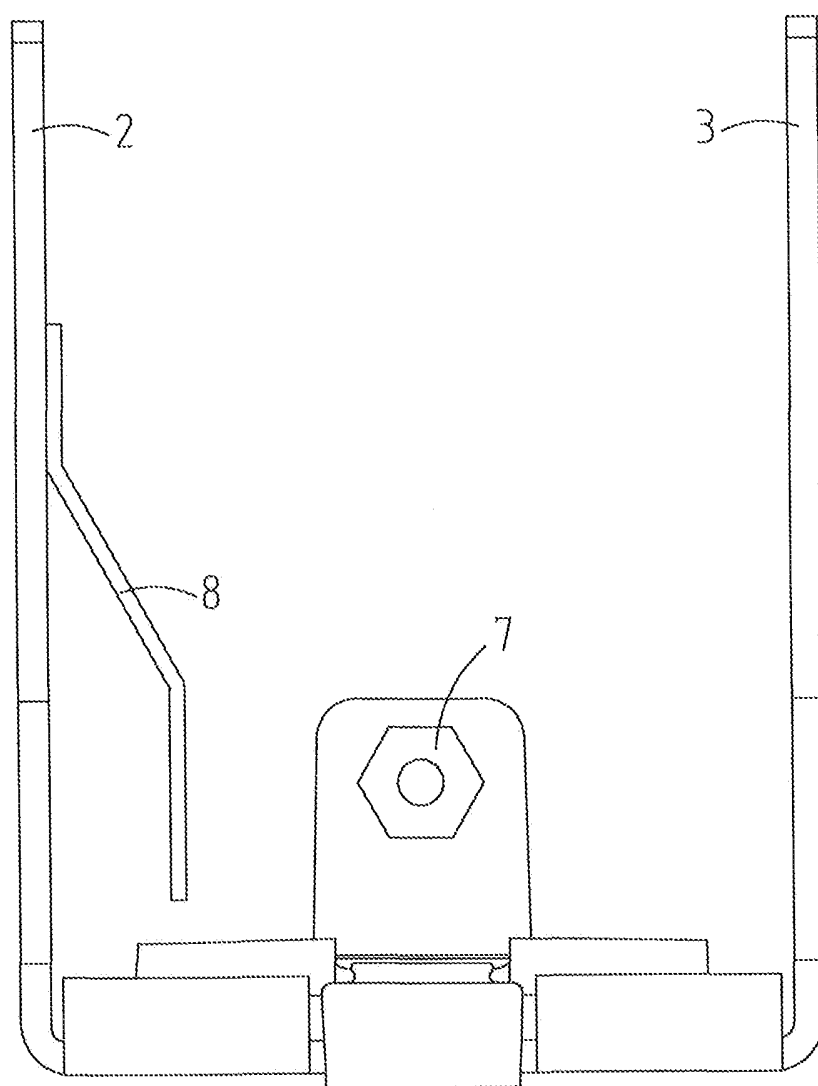


Fig. 1

Fig. 2

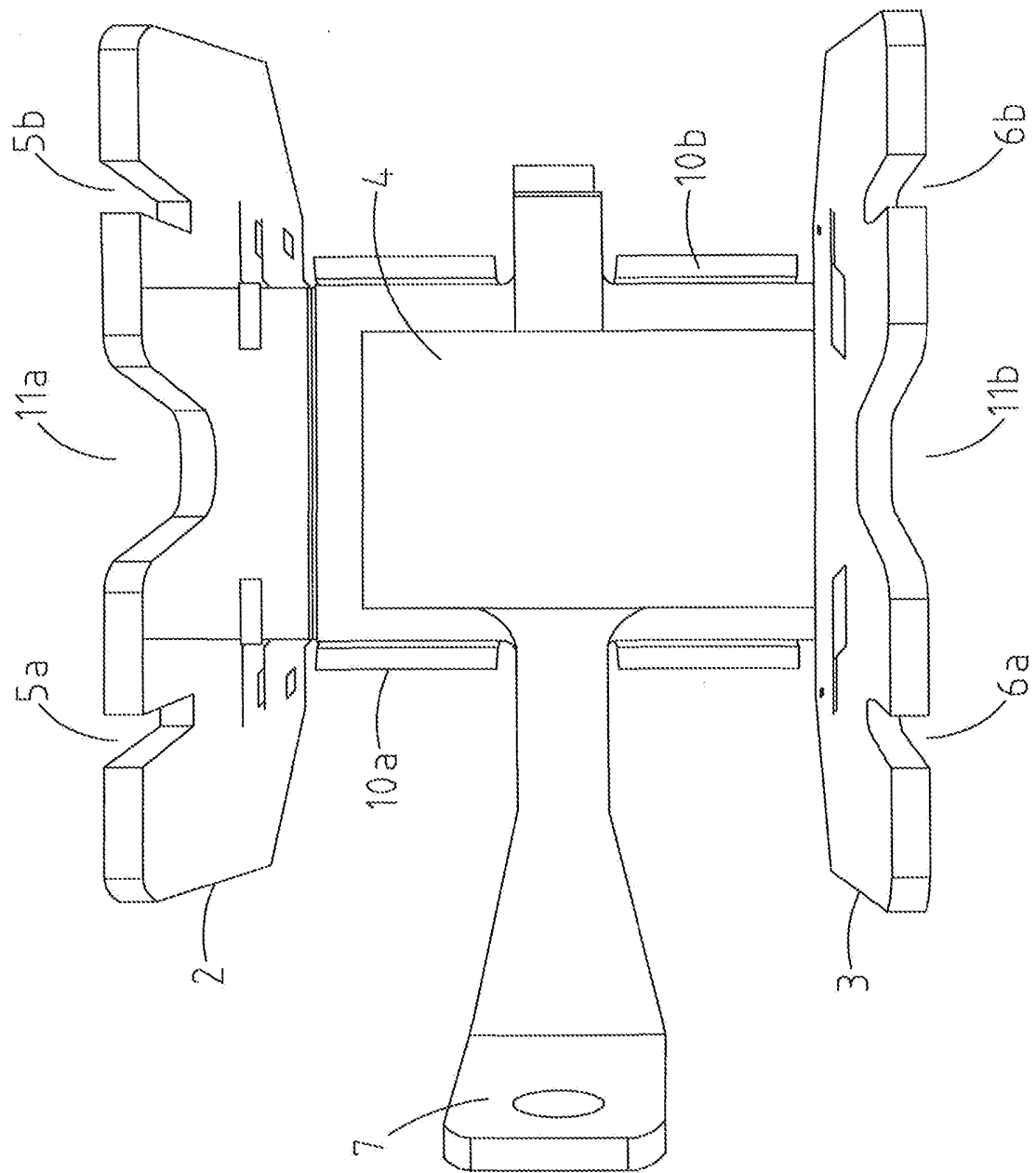


Fig. 3

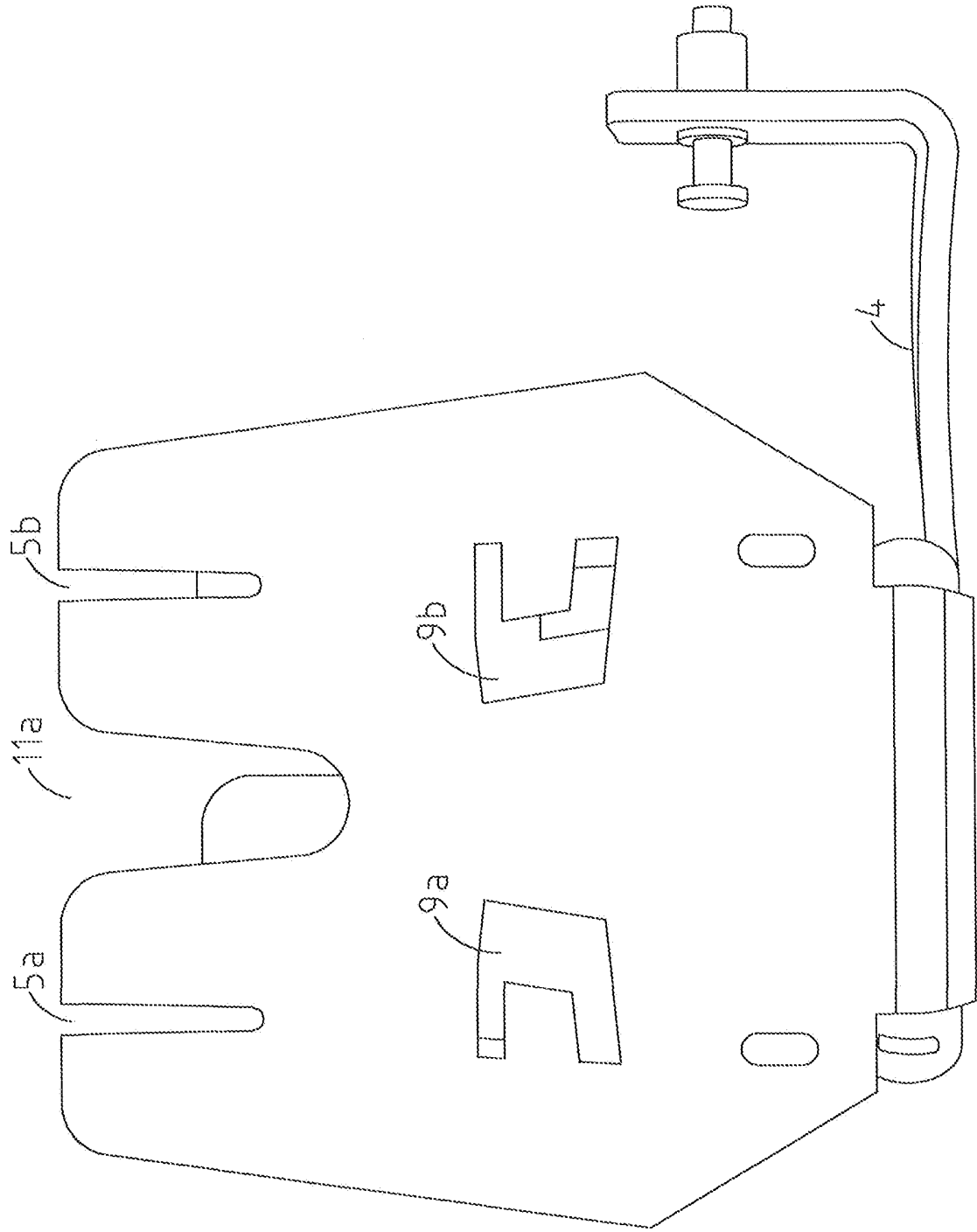


Fig. 4

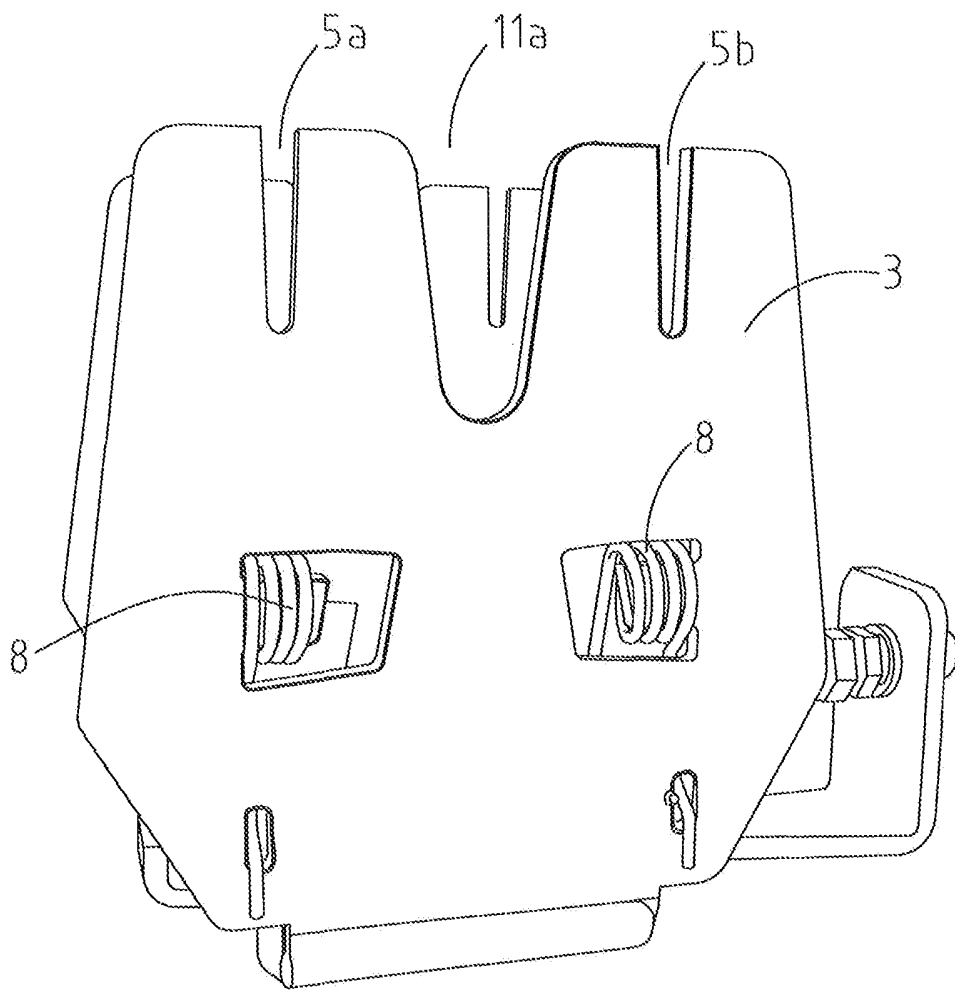
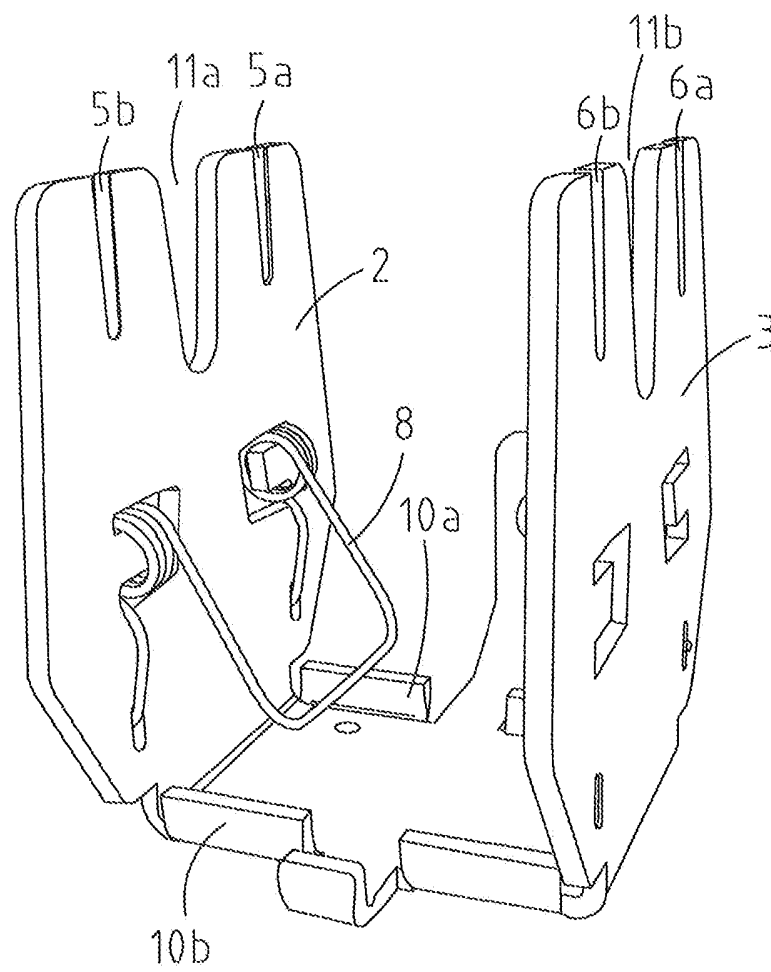


Fig. 5

Fig. 6

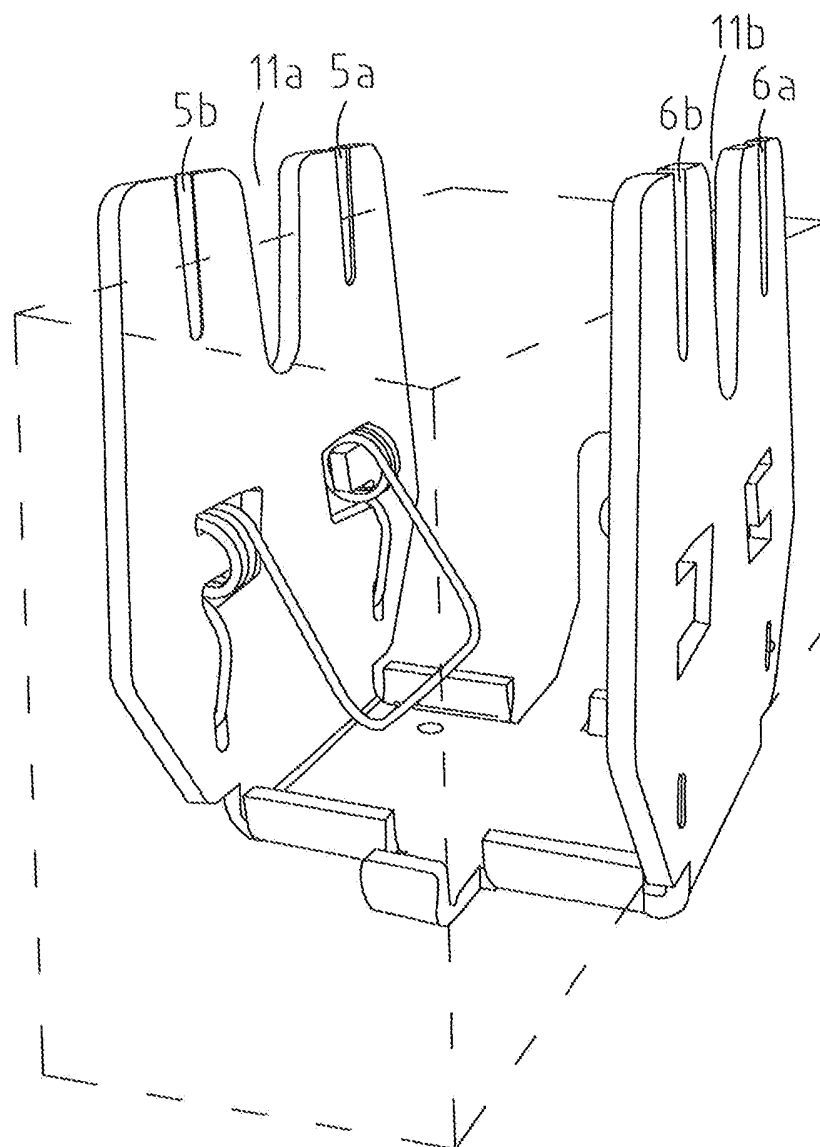


Fig. 7

Title

Brick Cutter Device and Method

Field of the Invention

- 5 The invention relates to a brick cutter or splitter device and method of cutting same. In particular, the invention relates to a device and method to split brick into three-quarters, halves and quarters accurately and quickly.

10 **Background to the Invention**

- When constructing a building from bricks or blocks, it is often necessary to cut a brick or block to a required size, for example for positioning at an end of a wall. For smaller building units such as bricks, a skilled brick-layer uses a bolster and hammer to obtain the required size
15 of brick. For larger units, such as blocks, a skilled brick-layer uses a bolster and hammer, consaw or other stone blade device on a table. A bolster is a large flat-bladed chisel that is placed over the brick with a cutting
20 edge in the desired position and struck by the operative using a hammer or mallet to cut the block. These cuts are used at the ends of walls, door/window jams or any openings. Walls built in certain bonds can use a considerable amount of these cuts e.g. English, Flemish and
25 Dutch bond.

- When cutting a facing brick a skilled brick-layer will always need to use a bolster to ensure an accurate and even cut. The size of the cut to be made must be measured and
30 marked on the brick, which is then cut using a bolster. This procedure must be carried out for each brick that is to be cut, making this a time consuming procedure.

Numerous devices have been designed to provide a brick or stone cutter that is portable and easy to use. Types of brick cutters are available for sale on the internet, for example the following two websites:

5 <http://www.trevorbaylisbrands.com/tbb/success/products/brick.asp> and <http://tclproducts.co.uk/supporttcl7005.html>

UK patent publication numbers GB 2 367 032 and GB 2 411 146 disclose portable brick cutters or splitters. The brick cutting device disclosed in GB 2 367 032 addresses some of the problems in the art in that it has a cutting edge underneath the brick so that when an impact is put upon the top cutting chisel, it has the effect of producing a clean break. This device has a number of flaws. Each brick has to be individually positioned and measured on the device. This is a slow and time consuming process and the device comprises of several parts and screws which need to be assembled. The device is heavy, weighs 4kg, costly to bulk transport and heavy for the bricklayer to carry and cumbersome as the device does not fit easily into the bricklayer's tool bag. In addition the device arrives in flat pack format and has to be assembled by the purchaser and the components of this device are subject to breaking, rendering the product unworkable.

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The cutter device of GB 2 411 146 attempts to solve the problem of repetitive measuring when splitting a number of brick but this device suffers from a number of drawbacks. This device comprises of several moving/wearing parts- pieces, springs, pins, bolts & screws increasing the chances of the product breaking down. A design weakness of the device of GB 2 411 146 is that it suffers the same problem as the hammer and chisel method, in that it has no

30

impact point at the base of the brick. This often leads to the brick shearing in the wrong plane leading to wastage. The device is designed so that it can only cut quarters out of full brick, with the result that it is unable to recycle
5 broken bricks into quarters. When this device is placed on a brick, if the brick is not square in shape at the corners, the chisel will not be positioned at right angles. This will result in poorly cut bricks.

10 Neither of the two devices above provide a mechanism for enclosing bricks to stabilise before cutting, leading to the bricks slipping or moving sideways before the brick can be cut and/or a clean accurate cut of the brick is achieved.

15 To date, there is no device in the marketplace that can cut bricks into three quarters, halves and quarters that is compact and dynamic to use. The present invention aims to provide a brick cutting device and method to overcome the
20 above mentioned problems.

Summary of the Invention

The present invention provides, as set out in the appended claims, a brick cutter device comprising:

- 25 a sheet of metal folded at two sides to define two side walls and a base, each side wall is adapted to provide an opening to receive a cutting member, for example a masonry bolster;
- an adjustable mechanism at one end of the base adapted
30 to support a brick at one end of the brick, such that the mechanism can be adjusted dependent on where the brick needs to be cut; and

a biasing means positioned on one of the sidewalls to provide a force on the brick to stabilise the brick, when said brick is placed on said base before the brick is cut by said cutting member.

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The invention provides the first self-contained brick splitting device, that can be laser cut, and folded out of the one piece of steel, i.e. with no bolts or welds.

10 In one embodiment the biasing means is a spring. The incorporation of the self-contained spring in the side of the device advantageously automatically positions the brick at right angles to the cut.

15 In one embodiment the spring is attached to one of the side walls, said spring comprising a stainless steel compression contortion spring that guides the brick against the inner side wall of the device to stabilise said brick, so that the line of the cut from said cutting member on the brick
20 is at right angles to the brick.

In one embodiment the openings of each side wall are positioned in line with each other to form an axis to define where the brick is cut by said cutting member.

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In one embodiment the base is kinked or folded to form a ridge said ridge is formed in line with said axis. The ridge forms an impact point. Preferably the ridge is at a substantially right angle to the base. This alleviates the
30 need for a cutting edge to be placed underneath the brick.

In one embodiment the sidewall openings, to receive the cutting member, are substantially V shaped.

In one embodiment each side wall comprises means for receiving the biasing means such that by switching the biasing means from one side wall to the other side wall for left handed or right handed operation. The device can be adapted to suit either left or right handed people by simply switching the spring from side to side.

In one embodiment one end of the base is folded back towards itself, such that said adjusting mechanism cooperates with said folded base to provide a support for one end of said brick. The locking mechanism can be adjusted to set the distance between the support and the axis (defined by the opening) where the brick is to be cut.

In one embodiment said adjusting mechanism is a locking nut/bolt that cooperates with said base.

In one embodiment the sheet of metal is stainless steel. The device is made entirely from stainless steel with the result that it is rustproof and does not require the need to be painted.

In one embodiment one side wall comprises a pair of openings positioned in line with a pair of opposite openings in said other side wall to form two separate axes to define two lines where the brick can be cut by said cutting member. The inventor has solved the problem associated with prior art brick and block cutting methods and devices and has developed a device that cuts both three quarters, halves and quarters of bricks/blocks quickly and accurately.

In one embodiment the base comprises two ridges positioned in line with each axis defined by opposite openings in said side walls.

5 In another embodiment of the present invention there is provided a brick cutter device comprising:

a sheet of metal folded at two sides to define two side walls and a base, each side wall is adapted to provide an opening to receive a cutting member, for example a
10 masonry bolster;
an adjustable mechanism at one end of the base adapted to support a brick, such that the mechanism can be adjusted dependent on where the brick needs to be cut by said cutting member.

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In a further embodiment of the invention there is provided a brick cutter device comprising:

a sheet of metal folded at two sides to define two side walls and a base, each side wall is adapted to provide
20 an opening to receive a cutting member, for example a masonry bolster;
a biasing means positioned on one of the sidewalls to provide a force on the brick to stabilise the brick, when said brick is placed on said base before the brick
25 is cut by said cutting member.

Brief Description of the Drawings

The invention will be more clearly understood from the following description of an embodiment thereof, given by
30 way of example only, with reference to the accompanying drawings, in which:

Figure 1 illustrates a side view of the brick cutter device according to the present invention;

Figure 2 illustrates an end view of the brick cutter device;

5 Figure 3 illustrates a plan view of the brick cutter device;

Figures 4 and 5 illustrate a side view of a brick cutter device according to another aspect of the invention; and

10 Figure 6 and 7 illustrate 3D perspective views of the brick cutter device of Figures 4 and 5.

Detailed Description of the Drawings

Referring now to the drawings and initially Figure 1 to 3
15 there is shown a brick cutter device according to the present invention indicated generally by the reference numeral 1. A sheet of metal folded at two sides to define two side walls, 2, 3 and a base 4. The side wall 2 is adapted to provide an opening 5a, 5b, and side wall 3 is
20 adapted to provide an opening 6a and 6b to receive a cutting member (not shown), for example a masonry bolster. The device 1 is constructed from a single piece of metal, for example stainless steel, that is neither bolted nor welded together.

25

An adjustable mechanism 7 at one end of the base 4 adapted to support a brick, such that the mechanism 7 can be adjusted dependent on where the brick needs to be cut. The mechanism 7 can be an adjustable bolt at the rear, to suit
30 a size difference of 20mm in length of the standard 215mm long brick. The end of the base 4 can be folded back on itself, such that the adjusting mechanism 7 adjusts said folded base relative to the opening of said side walls. A

lip or fold at the other end of the base prevents the brick from tipping over when the device is in use.

A biasing means 8 positioned on one of the sidewalls 2 to
5 provide a force on the brick to stabilise the brick, when
the brick is placed on the base 4 before the brick is cut
by a cutting member (not shown). The biasing means 8 can be
a spring that is self contained in the side of the device.
The spring 8, for example a stainless steel compression
10 contortion spring, automatically guides the brick against
the inner side of the device, so that the line of the cut
on the brick is at right angles to the brick. This spring
can be switched to the opposite side wall 3 of the device
so as to suit either right/left handed people.

15

The opening 5a of side wall 2 is positioned in line with
opening 6a of the side wall 3 to form an axis to define
where the brick can be cut by the cutting member. It is
recommended that a bolster of blade with greater than 100mm
20 is used in the operation of splitting the brick. The base 4
is kinked or folded to form a ridge 10a, 10b, said ridge is
substantially formed in line with said axis. The ridge 10a,
10b, is at a right angle to form an impact point directly
underneath where the bolster strikes the brick.

25

In addition the side walls 2, 3 are provided with an
optional opening 11a and 11b that make the brick more
accessible and easier for the user to insert and remove the
brick from the device.

30

The openings themselves, 5a, 5b, 6a and 6b, are preferably
V-shaped in design to guide the bolster to the correct
cutting point and when the recommended bolster is used as

it comes in contact with the base of the V point, it is automatically stopped. At this point, the bolster will have travelled far enough through the brick to split it. It will be appreciated that the openings 5a, 6a cuts bricks three quarters and quarters while openings 5b and 6b cuts bricks in half.

In a further embodiment the one side wall comprises a pair of openings positioned in line with a pair of opposite openings in said other side wall to form two separate axes to define two lines where the brick can be cut by said cutting member. In addition, the base comprises two ridges positioned in line with each axis defined by opposite openings in said side walls. This embodiment allows the brick to be cut either three quarters, halves or quarters.

Figures 4 - 7 illustrate another embodiment of the device of the present invention. Figures 4 and 5 illustrate a side view of a brick cutter device according to another aspect of the invention. Figure 6 and 7 illustrate 3D perspective views of the brick cutter device of Figures 4 and 5. The device is essentially the same as for Figures 1, 2 and 3, except the device comprises two openings 9a and 9b on each side wall, as opposed to a single opening, for receiving the biasing means 8. The biasing means 8 comprises a stainless steel compression contortion spring, that guides the brick against the inner side wall of the device to stabilise said brick, so that the line of the cut from the cutting member (not shown) on the brick is at right angles to the brick. The spring 8 urges the brick against the opposite side wall before the brick is cut by the cutting means, for example using a masonry bolster (not shown), as clearly shown in Figures 6 and 7. The dotted line in Figure

7 is a brick inserted in the device before being cut by the cutting means.

EXAMPLE METHOD OF OPERATION

5

- i. Place the cutter device on a substantially flat hard surface.
- ii. Adjust the stop bolt at the rear of the device to suit the standard size of brick that is to be cut or split.
10 For example, if one is splitting a brick of standard size 215mm x 102.5mm x 65mm, then the distance from the back stop to the centre of the bolster slots and impact point on the base must be 102.5mms to split halves. The device is automatically set up to cut
15 quarters at 46.25mms. Alternatively, the bolt can be retracted 10mms to accommodate a three quarter cut.
- iii. Once the bolt has been adjusted, the bolt is locked into position with the nut. The device is now set up to split the desired halves in slots 5b and 6b and is
20 automatically in the right position to split quarters for that standard size brick due to the position of slots 5a and 6a. Again, the bolt can be retracted 10mms to accommodate a three quarter cut in slots 5a and 6a, if required.
- 25 iv. Place the brick into the device, making sure the end of the brick is against the back stop. The spring automatically pushes the brick against the side of the device.
- v. Using a bolster of recommended chisel length of 100mms
30 or more, place the cutting edge into the slot of the desired size (half or quarter size bricks).
- vi. Impact of force on the bolster with a hammer and the brick is cut with accuracy and ease. The bolster and

the base impact point never come in contact when splitting bricks, this ensures that the device is very safe and easy to handle.

- vii. Remove the desired cut brick from the device and
5 repeat the operation if required.

It will be appreciated that the brick cutter or splitter device of the present invention, hereinbefore described, can be modified to suit the needs of bricklayers worldwide
10 as the device can either be reduced/increased in size to suit the standard brick size in any given country, for example adapted to suit different size bricks in the UK, South Africa, USA and Australia.

15 It will be further appreciated that the device of the present invention is lightweight (of the order of 0.8kg) yet it is very strong due to the nature of the material used and the fact that the device is folded out of one piece of steel.

20

Due to the devices dimensions and weight, the device lends itself to be carried in every builder's tool bag. As it is made from stainless steel, it is much more robust and will last longer than competitor brick cutters. As it is made
25 from one piece of steel, it is cost effective to manufacture. Due to its size, shape and weight, it can be posted individually or delivered in bulk price competitively.

30 It is recommended that the device is screwed or bolted to another piece of material through the holes provided in the base of this device (not shown). It will give added

protection in the event of falling from a height and also give stability during operation.

In this specification the term 'brick' is described to mean
5 any type of brick or block that is suitable for use in the construction industry, and should therefore be given a broad interpretation in the context of the present invention.

10 It will be appreciated that the device of the present invention can accommodate a standard bolster of recommended width of more than 100mms. This alleviates the need for the device to have a special chisel incorporated into itself so no wearing parts are present in this device, unlike the
15 prior art discussed above.

The device of the present invention is dedicated to cutting modular sizes i.e. three quarters, halves and quarters. This ensures that the device is very robust and long
20 lasting and does not try to incorporate superfluous features that are unnecessary and not required by a competent bricklayer/tradesman.

While the invention has been described herein with
25 reference to several especially preferred embodiments, these embodiments have been presented by way of example only, and not to limit the scope of the invention. Additional embodiments thereof will be obvious to those skilled in the art having the benefit of this detailed
30 description, especially to meet specific requirements or conditions. Further modifications are also possible in alternative embodiments without departing from the inventive concept.

The invention is not limited to the embodiments hereinbefore described but may be varied in both construction and detail.

Claims

- 1.A brick cutter device comprising:
- 5 a sheet of metal folded at two sides to define two side walls and a base, each side wall is adapted to provide an opening to receive a cutting member, for example a masonry bolster;
- 10 an adjustable mechanism at one end of the base adapted to support a brick at one end of the brick, such that the mechanism can be adjusted dependent on where the brick needs to be cut; and
- 15 a biasing means positioned on one of the sidewalls to provide a force on the brick to stabilise the brick, when said brick is placed on said base before the brick is cut by said cutting member.
- 2.The brick cutter device as claimed in claim 1 wherein the biasing means is a spring.
- 20 3.The brick cutter device as claimed in claim 2 wherein the spring is attached to one of the side walls, said spring comprising a stainless steel compression contortion spring, that guides the brick against the inner side wall of the device to stabilise said brick, so that the line
- 25 of the cut from said cutting member on the brick is at right angles to the brick.
- 4.The brick cutter device as claimed in any preceding claim wherein the opening of each side wall are positioned in
- 30 line with each other to form an axis to define where the brick is cut by said cutting member.
- 5.The brick cutter device as claimed in claim 4 wherein the base is kinked or folded to form a ridge to form an

impact point for said brick in use, said ridge is substantially formed in line with said axis.

5 6.The brick cutter device as claimed in any preceding claim wherein the sidewall openings, to receive the cutting member, are substantially V shaped.

10 7.The brick cutter device as claimed in any preceding claim wherein each side wall comprises means for receiving the biasing means such that by switching the biasing means from one side wall to the other side wall for left or right handed operation.

15 8.The brick cutter device as claimed in any preceding claim wherein the one end of the base is folded back towards itself, such that said adjusting mechanism cooperates with said folded base to provide a support for one end of said brick.

20 9.The brick cutter device as claimed in claim 8 wherein said adjusting mechanism is a locking nut/bolt that cooperates with said folded base.

25 10.The brick cutter device as claimed in any preceding claim wherein the metal is stainless steel.

30 11.The brick cutter device as claimed in any preceding claim wherein one side wall comprises a pair of openings positioned in line with a pair of opposite openings in said other side wall to form two separate axes to define two lines where the brick can be cut by said cutting member.

12.The brick cutter device as claimed in claim 11 wherein the base comprises two ridges positioned in line with each axis defined by opposite openings in said side walls.

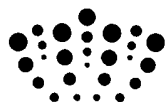
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13.A brick cutter device as substantially hereinbefore described with reference to the accompanying description and/or drawings.

10

14.A kit comprising:

a brick cutter device according to any of claims 1 to 13; and
a cutting member, for example a bolster.



Application No: GB0908282.7

Examiner: Mr Michael Prior

Claims searched: 1-14

Date of search: 2 July 2009

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	GB 2450744 A (PUGH) -
A	-	GB 1509747 A (JUUL) -
A	-	US 1799173 A (LINDSAY) -
A	-	GB 2258184 A (McCUTCHAN) -
A	-	US 5722471 A (FREDRICKSON) -

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X:

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Worldwide search of patent documents classified in the following areas of the IPC

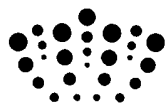
B28D

The following online and other databases have been used in the preparation of this search report

Online: EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
B28D	0001/26	01/01/2006



18

Subclass	Subgroup	Valid From
B28D	0001/22	01/01/2006