

CONVENTION APPLICATION BY A COMPANY

FORM 8 - REGULATION 12 (2)

AUSTRALIA
PATENTS ACT 1952

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

In support of the Convention Application made by.....

(a) Here Insert (in full) Name of Company.

(a) WADKIN PLC

(hereinafter referred to as "Applicant") for a patent for an invention entitled:

(b) Here Insert Title of Invention.

(b) "TIMBER PLANING MACHINES"

(c) and (d) Here Insert Full Name and Address of Company Official authorised to make declaration.

(c) EVERETT NAISBITT DOBBIE
of (d) Briarside, West Rainton, County Durham,
United Kingdom

do solemnly and sincerely declare as follows:

1. I am authorised by Applicant to make this declaration on its behalf.

2. The basic Application(s) as defined by section 141 of the Act was / were made

in (e) United Kingdom on the 16th day of August 19 85

by (f) WADKIN PLC

in United Kingdom on the 9th day of January 19 86

by WADKIN PLC

in on the day of 19

by

in on the day of 19

by

3. (g) THOMAS ROBSON, of 13 Moorsfield, Fence Houses,

Houghton-le-Spring, Tyne & Wear, DH4 5R

UNITED KINGDOM

is/are

the actual inventor(s) of the invention and the facts upon which Applicant is entitled to make the Application are as follows:

If a patent were granted to the actual inventor in respect of the said invention, the Applicant would be entitled to have the patent assigned to it.

4. The basic Application(s) referred to in paragraph 2 of this Declaration was/were the first Application(s) made in a Convention country in respect of the invention, the subject of the Application.

DECLARED at Fence Houses, Houghton le Spring, Tyne & Wear

this 25th day of MAY 19 88

See reverse side of this form for guidance in completing this part.

(h) Personal Signature of Declarant (c) (no seal, witness or legalisation).

(h)

Handwritten signature of Thomas Robson

(12) PATENT ABRIDGMENT (11) Document No. AU-B-61490/86
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 593272

(54) Title
TIMBER PLANING MACHINE

International Patent Classification(s)
(5i)^a **B27C 001/08**

(21) Application No. : **61490/86** (22) Application Date : **22.07.86**

(87) WIPO Number : **WO87/01097**

(30) Priority Data

| (31) Number | (32) Date | (33) Country |
|----------------|-----------------|--------------------------|
| 8520563 | 16.08.85 | GB UNITED KINGDOM |
| 8600488 | 09.01.86 | GB UNITED KINGDOM |

(43) Publication Date : **10.03.87**

(44) Publication Date of Accepted Application : **08.02.90**

(71) Applicant(s)
WADKIN PLC

(72) Inventor(s)
THOMAS ROBSON

(74) Attorney or Agent
SHELSTON WATERS

(56) Prior Art Documents
GB 809670
GB 668988

(57) Claim

1. A machine for planing lengths of timber having mutually perpendicular spindles for cutter blocks characterised in that a first one of the spindles extends below a machine bed, a second extends across the bed beyond the first, and there are means for feeding a workpiece past the cutter blocks at a lower level than the bed.

PCT

AU-AI 61490/86
WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

593272

(51) International Patent Classification 4 :

B27C 1/08

A1

(43) International Publication Number

WO 87/01067

(43) International Publication Date: 26 February 1987 (26.02.87)

(21) International Application Number: PCT/GB86/00435

(22) International Filing Date: 22 July 1986 (22.07.86)

(31) Priority Application Numbers: 8520563
8600488

(32) Priority Dates: 16 August 1985 (16.08.85)
9 January 1986 (09.01.86)

(33) Priority Country: GB

(71) Applicant (for all designated States except US): WADKIN PLC [GB/GB]; Green Lane Works, Leicester LE5 4PF (GB).

(72) Inventor; and
(75) Inventor/Applicant (for US only) : ROBSON, Thomas [GB/GB]; 13 Moorsfield, FenceHouse, Houghton-le-Spring, Tyne & Wear DH4 5PF (GB).

(74) Agent: SERJEANT, Andrew, Charles; Serjeants, 25 The Crescent, King Street, Leicester LE1 6RX (GB).

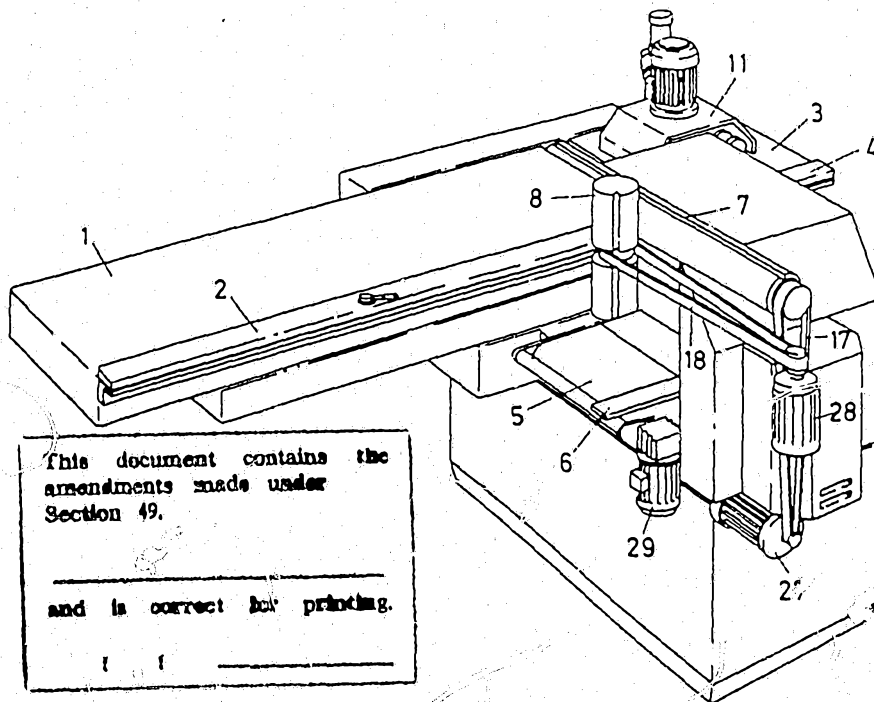
(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US.

Published
With international search report.

A. O. J. P. 16 APR 1987



(54) Title: TIMBER PLANING MACHINES



(57) Abstract

A machine for planing lengths of timber comprises mutually perpendicular spindles for cutter blocks (7, 8). The spindle carrying the cutter block (8) extends below a machine bed (1). The spindle carrying the cutter block (7) extends across the bed (1). A conveyor (5) is provided for feeding a workpiece past the cutter blocks (7, 8) at a lower level than the bed. In a modification the spindle carrying the cutter block (7) drives a cutter block (9) which is offset from the spindle itself.

TITLE:

Timber Planing Machines

DESCRIPTION:

Technical Field

5 The invention relates to machines for planing lengths of timber. In such a machine, rough square-sawn timber is surface planed and cut to a predetermined thickness at an early stage in its use in manufacture. Such machines can similarly be used on a limited range of plastics and
10 composite materials.

Background Art

Timber planing machines comprise a bed and a fence providing a datum line along which a piece of timber is passed for planing. Several cutters are generally
15 provided for removing a large amount of wood from a single face of a piece of timber which is bowed or twisted, and/or for planing mutually perpendicular faces. The need to force a workpiece into contact with a cutter makes it very difficult in practice to plane
20 mutually parallel faces of a workpiece on a single pass through the machine. At least three passes are generally required for a workpiece to be planed all round in a four side planing



machine, and this makes it necessary for the workpiece to be carried back to the input end of the machine after the second pass.

GB 1020571 illustrates in its Figures 5 to 7 a four sided planing and moulding machine. Four or five cutter heads operate successively on a workpiece as it passes along a bed or table from right to left starting at driven presser rollers. A first cutter trues the bottom of the workpiece and also the lower part of its edge, producing two datum faces by which the workpiece can be properly guided for later facing operations. The table and fence are longitudinally divided to allow for adjustment of the depth of cut. This machine is expensive to produce, and time-consuming to adjust, but satisfactory for producing large quantities of timber of the same cross section. In practice, it has proved limited to a maximum product cross section of 4 inches by 3 inches (about 100mm by 75mm).

GB 668988 relates to moulding planes which work the four sides of a plank with cutters arranged on crossed shafts, two sides being worked on each of two passes through the machine in opposite directions and at different levels. This plane is suitable for profiling or shaping a plank, particularly for cutting tongues and grooves, but cannot be used for straightening because it does not include a bed for supporting a workpiece. It has feed rollers at the side from which the workpiece is fed, and does not include an extractor as is necessary for the large quantity of chips produced in straightening.

The Invention

In summary, a machine according to the invention comprises mutually perpendicular spindles for cutter blocks, a first one of the spindles extending below a machine bed, a second extending across the bed from one side of the first to the other, means for



feeding a workpiece past the cutter blocks at a lower level than the bed, and feed mechanism for conveying the workpiece beyond the first spindle.

5 In operation, on a first pass through the machine, the workpiece is planed on two mutually perpendicular faces by parts of cutter blocks adjacent to and extending over the bed. On a second pass back through the machine at the lower level, the other two faces are planed by parts of the cutter blocks below the bed and extending to the side of the first cutter block remote from the
10 first pass. Two operators, one at each end of the machine, can maintain a high level of activity passing workpieces through the machine once in each direction for planing on all four faces. The sense of rotation of the cutters, if correct for the first pass, is
15 automatically correct for the second.

The means for feeding the workpiece past the cutter blocks at the lower level is preferably a conveyor belt. This is suitable for maintaining the necessary pressure to keep the workpiece in contact with the second cutter block which extends across the bed. The conveyor belt makes it possible to use idler rollers to maintain the pressure to feed the workpiece, and consequently to do without driven rollers in this part of the machine. Alternatively, driven rollers could be used to feed the

.....
.....
.....
.....
.....
.....
.....

20

.....
.....
.....
.....
.....
.....



workpiece over a thickening table at the lower level.

The machine may be provided with spindles for more than one cutter block to plane any face of a workpiece. A moulding attachment may be provided at either end of the machine, and is preferably adjustable in all directions in order to mould the workpiece as required. The proximity of the essential two cutter blocks to each other facilitates the extraction from the machine of the chips produced in operation.

5
10
15
20
When planing a piece of timber which is badly bowed or twisted, or of great width, it is advantageous first to plane a lower face to provide a flat datum surface, and then to plane a face perpendicular thereto. Thus, in a modification, the spindles do not themselves actually each carry two cutter blocks; that is one above and one below the machine bed and one to each side of the other spindle. Either or both of the mutually perpendicular spindles drives a cutter block which is offset from the spindle itself. Any combination of such arrangements on either or both of the spindles may be provided according to customer requirements.

Drawings:

Figure 1 is an overall view of a machine according to the invention;

25
Figure 2 is a view similar to Figure 1 from the other side of the machine showing the planing of the first two sides of a workpiece;

30
Figure 3 is a closer view of the machine of Figures 1 and 2 from yet another stand-point showing the thickening or planing of the remaining two sides of the workpiece;

Figure 4 is a vertical section through the planing side of the machine of the preceding Figures, that is the side of the machine at which the first two sides of the



- workpiece are planed;
- Figure 5 is a section of the thickening or other side of the machine of the preceding Figures;
- Figure 6 is a sectional end view of the same machine;
- 5 Figure 4a is a vertical section corresponding to Figure 4 through the planing side of a modified machine according to the invention, that is through the side of the machine at which the first two sides of the workpiece are planed; and
- 10 Figure 5a is a section of the thickening or other side of the machine of Figure 4a.

Best Mode

With particular reference to Figure 1, the machine comprises a bed or infeed table 1, and a fence 2 along
15 which a workpiece is passed for planing. The workpiece passes to an outfeed table 3 and an outfeed fence 4. The workpiece is then placed on a lower or thickening table 5 against a fence 6 where it is passed back through the machine and planed on the remaining two sides. A
20 main cutter block 7 extends across the infeed table 1 and over the thickening table 5. A side cutter block 8, perpendicular to the main cutter block 7 and adjacent the infeed table 1, extends below the table 1 for planing the side of the workpiece in the thickening or second
25 pass through the machine.

The workpiece is generally introduced onto the table 1 by an operator to the left of Figure 1, and conveyed through the machine on a first pass by a feed mechanism 11 beyond the main cutter block 7. The workpiece planed
30 on the first two sides is then removed from the outfeed table 3, generally by a second operator standing to the right of Figure 1. The second operator then places the workpiece on the thickening table 5, which comprises a conveyor belt on which the workpiece is held in contact
35 by the pressure of idler rollers 43 (Figure 5). The

workpiece is conveyed along the fence 6 to the left in Figure 1 as it is thickened or planed on the remaining two sides by the parts of the cutter block 7 extending across the table 1 beyond the side cutter block 8, and of the block 8 extending below the table 1. The cutter blocks 7,8 are driven respectively through belts 17,18 from electric motors 27,28. The thickening table conveyor 5 is driven by an electric motor 29.

In Figure 2, there appears a piece of timber or workpiece being planed on its first two sides on its first pass through the machine. It can be seen how an extractor 16 for chippings produced in the planing on both the first and second passes through each machine is conveniently arranged over the cutter blocks 7,8. In Figure 3, the workpiece is shown on its second pass through the machine on which the remaining two sides are planed. The whole workpiece is thereby dimensioned.

Turning now to the sectional views, and Figure 4 first of all, it can be seen that the machine comprises a structurally rigid plinth 30 mounted on a box base 31. The infeed table 1 is mounted on a frame member 32 by swing links 33 for varying the depth of cut taken by the main cutter block 7. The fence 2 is adjustable on swing links to vary the depth of cut taken by the side cutter block 8. The outfeed table 3 is equipped with a fine adjustment handle 34 for levelling the table to the main cutter block 7, for example on re-setting after changing cutter knives.

The second sectional view from the thickening side in Figure 5 shows how the frame member 32 is supported on the plinth 30 by four screws 38, one at each corner, and only two of which appear in Figure 5, one in section and the other covered by a protective bellows 39.

Either one or both of the spindles carrying the cutter blocks 7,8 may be provided with a subsidiary offset spindle.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A machine for planing lengths of timber having mutually perpendicular spindles for cutter blocks characterised in that a first one of the spindles extends below a machine bed, a second extends across the bed beyond the first, and there are means for feeding a workpiece past the cutter blocks at a lower level than the bed.

2. A machine according to claim 1 in which the means is a conveyor belt.

3. A machine according to claim 2 in which there is an idler roller for maintaining the pressure to feed the workpiece.

4. A machine according to any one of the preceding claims in which an extractor removes chips produced by both the cutter blocks.

5. A machine according to any one of the preceding claims in which either or both of the mutually perpendicular spindles drives a cutter block which is offset from the spindle itself.

DATED this 28th day of JULY, 1989

WADKIN PLC

Attorney: WILLIAM S. LLOYD

Fellow Institute of Patent Attorneys of Australia
of SHELSTON WATERS



SUBSTITUTE SHEET

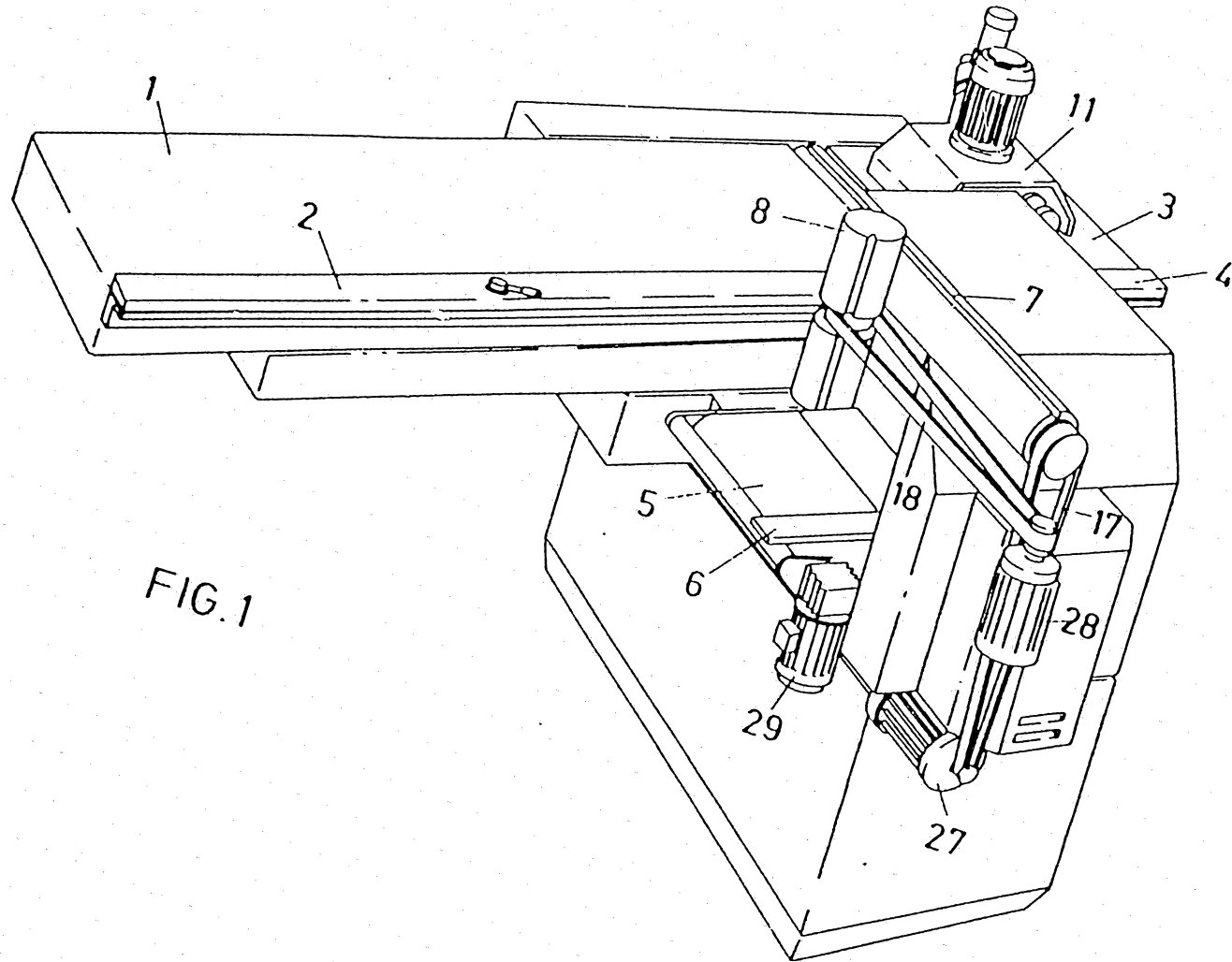
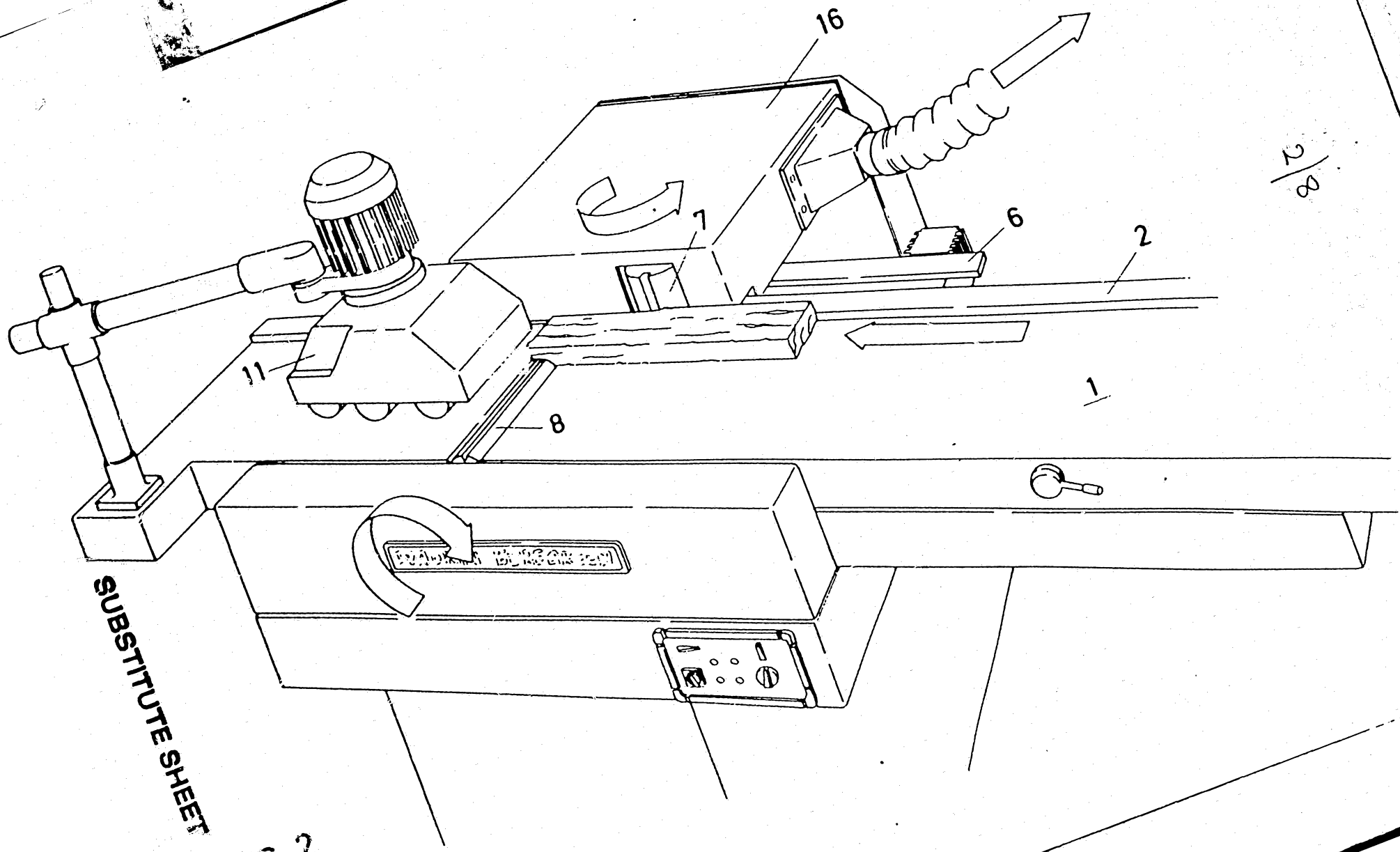


FIG. 1



2/8

PCT/GB86/00435

SUBSTITUTE SHEET

10.2

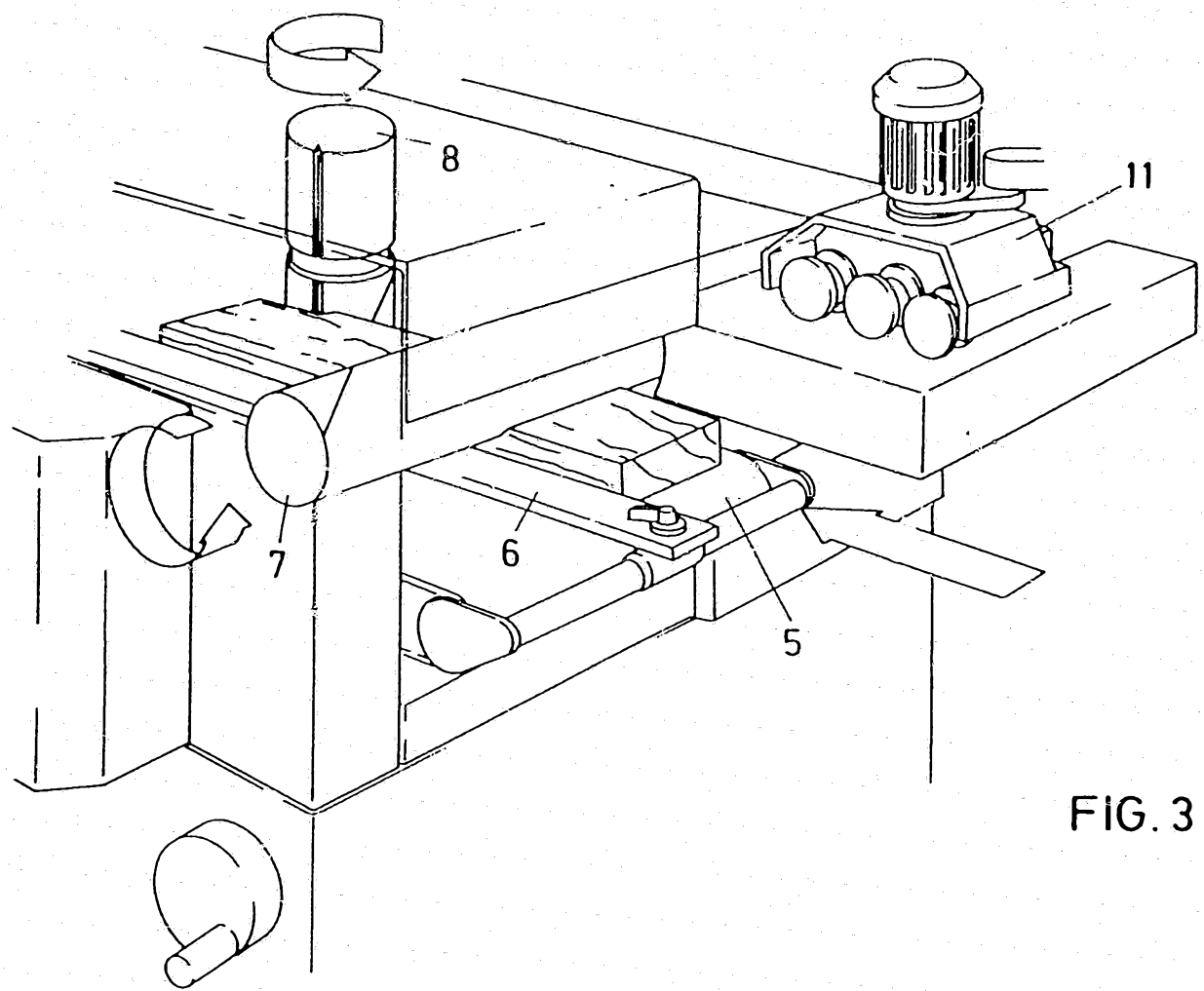


FIG. 3

SUBSTITUTE SHEET

SUBSTITUTE SHEET

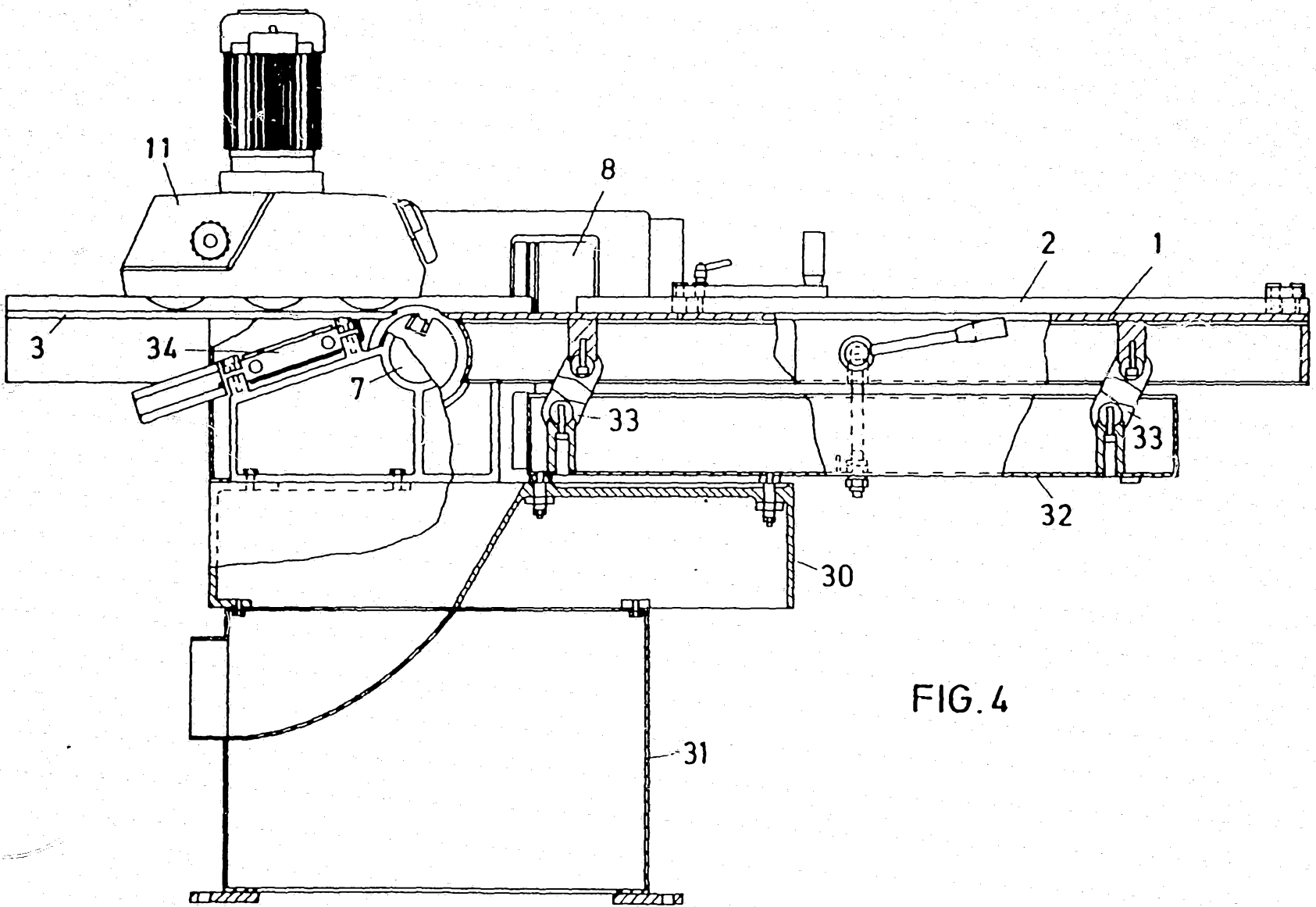


FIG. 4

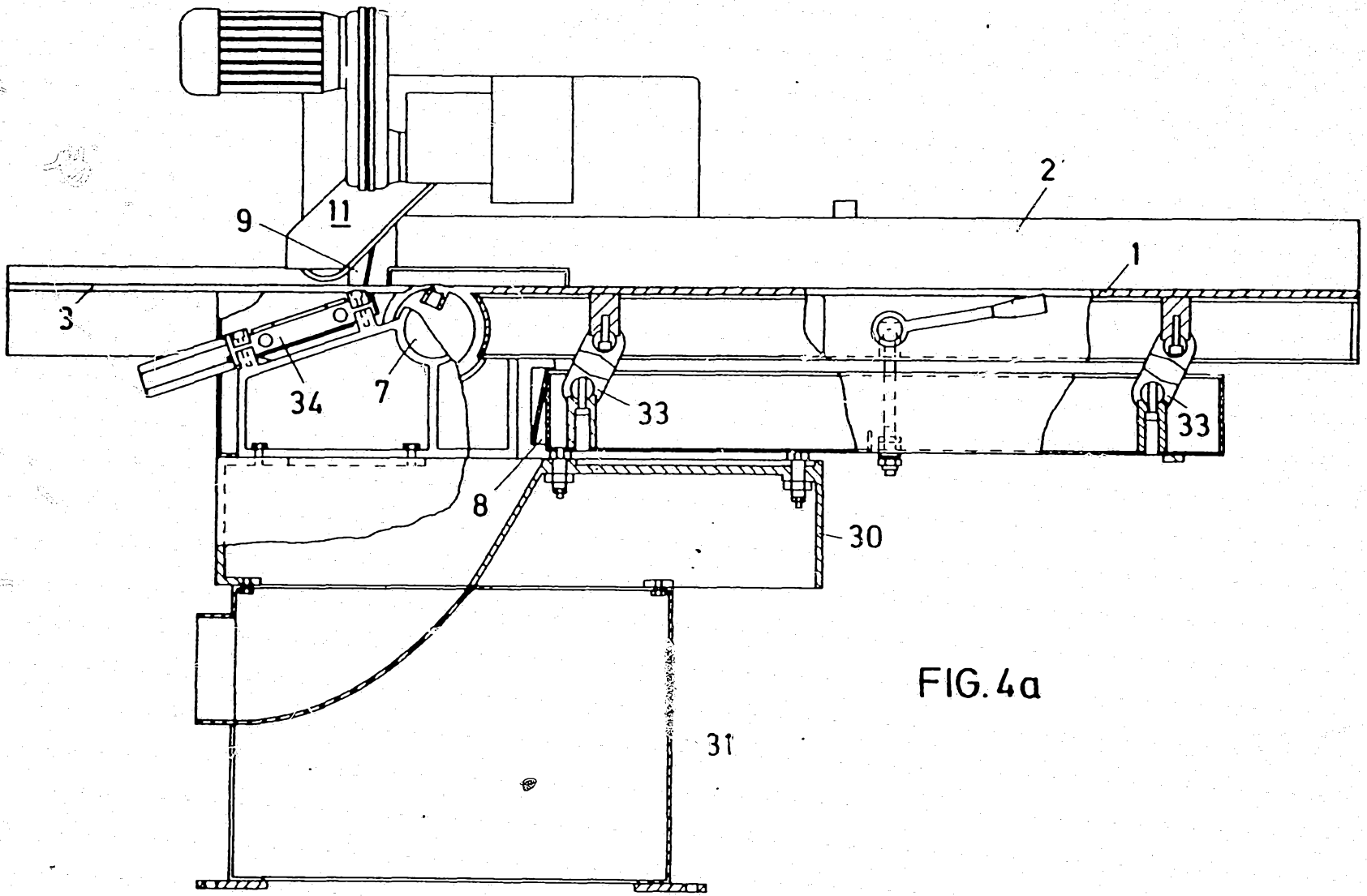


FIG. 4a

SUBSTITUTE SHEET

SUBSTITUTE SHEET

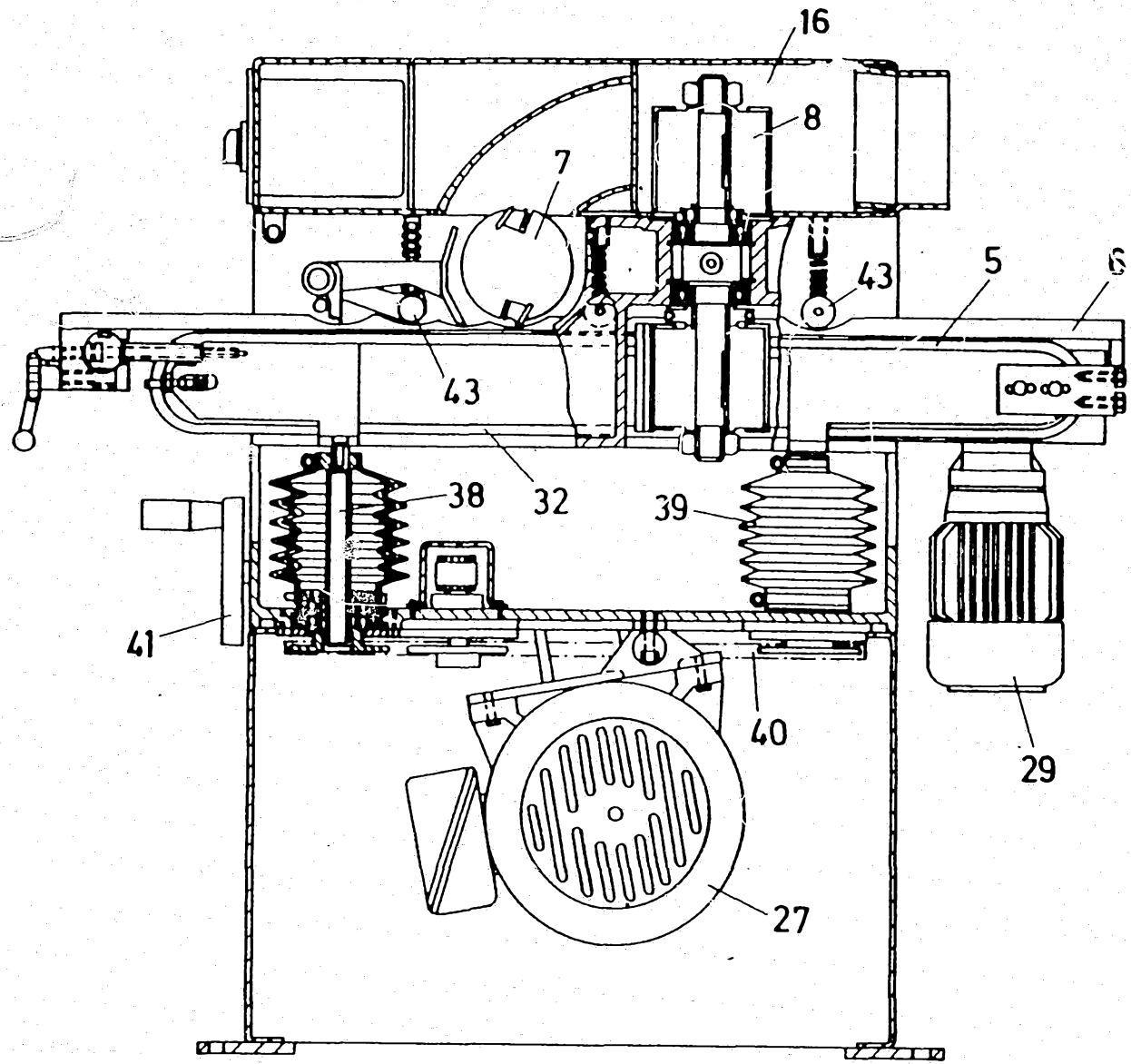


FIG. 5

SUBSTITUTE SHEET

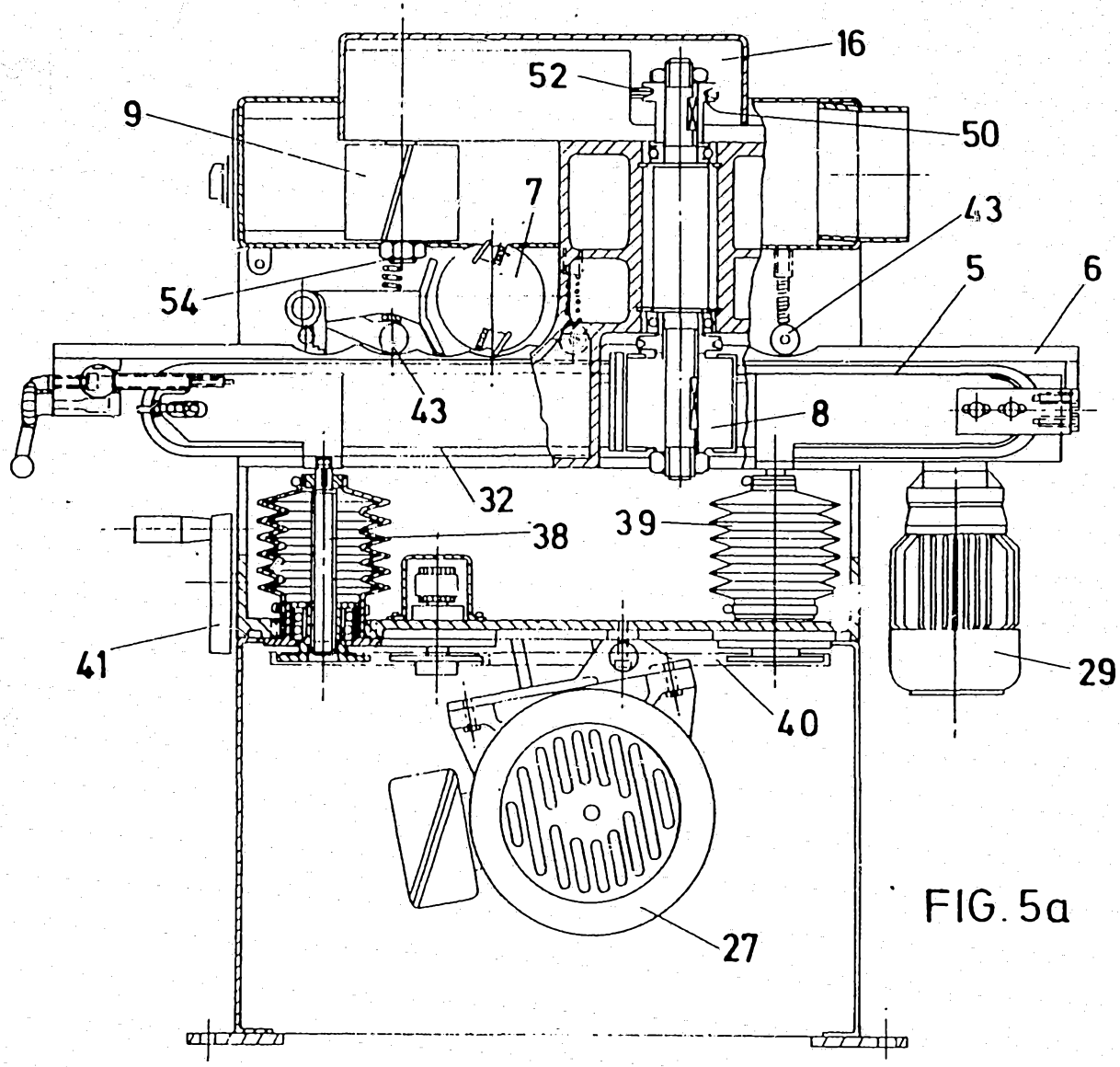
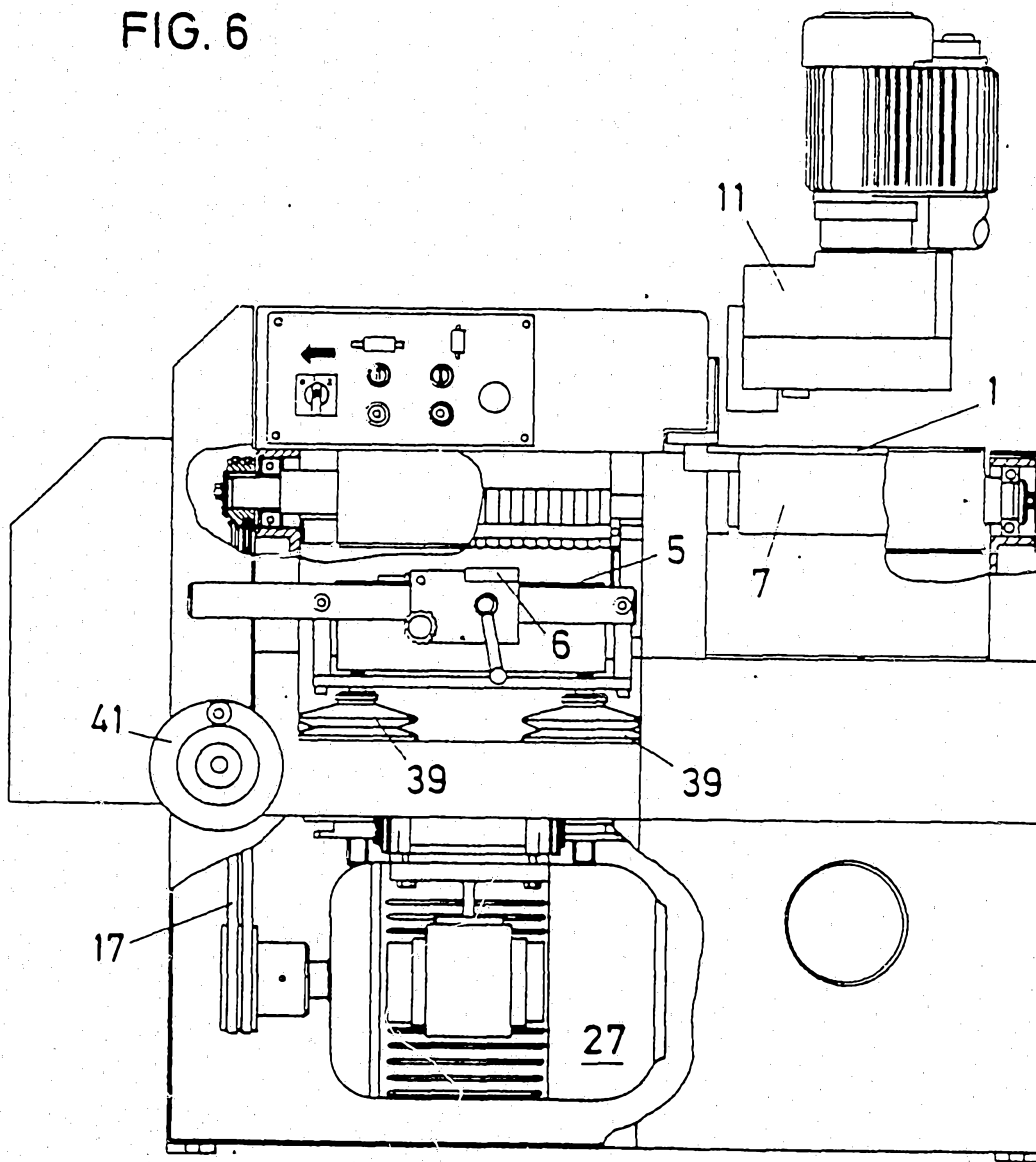


FIG. 5a

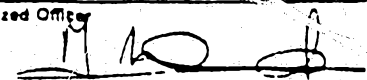
7/8

FIG. 6



INTERNATIONAL SEARCH REPORT

International Application No. PCT/GB 86/00435

| | | |
|---|--|--------------------------|
| I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) * | | |
| According to International Patent Classification (IPC) or to both National Classification and IPC | | |
| IPC ⁴ : B 27 C 1/08 | | |
| II. FIELDS SEARCHED | | |
| Minimum Documentation Searched † | | |
| Classification System | Classification Symbols | |
| IPC ⁴ | B 27 C B 27 F | |
| Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ‡ | | |
| III. DOCUMENTS CONSIDERED TO BE RELEVANT † | | |
| Category * | Citation of Document, †† with indication, where appropriate, of the relevant passages †‡ | Relevant to Claim No. †‡ |
| X | GB, A 668988 (AITTOMAKI) 26 March 1952 see page 1, lines 24-51 and line 57 - page 2, line 6; figures 1-3 | 1 |
| A | --- | 3 |
| A | GB, A, 1020571 (WADKIN) 23 February 1966 see page 1, lines 14-82; figure 5 | 1 |
| A | --- | |
| A | FR, A, 570916 (TETERD) 9 May 1924 see page 1, lines 1-10, 56-58; page 2, lines 39-43, 51-54; figures 1-4 | 1 |
| A | --- | |
| A | FR, A, 2547762 (SCM FINANZIARIA) 28 December 1984 see page 4, line 19 - page 5, line 23; figure | 2, 3 |
| A | --- | |
| A | DE, B, 1017361 (SCHULZ) 10 October 1957 see figures 1, 2 | 3 |
| A | --- | |
| A | US, A, 4440204 (BARTLETT) 3 April 1984 see column 1, line 58 - column 12, line 2; figures 2, 10 | 4 |
| | ./. | |
| <p>* Special categories of cited documents: 10</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the International filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the International filing date but later than the priority date claimed</p> <p>"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> | | |
| IV. CERTIFICATION | | |
| Date of the Actual Completion of the International Search | Date of Mailing of this International Search Report | |
| 28th October 1986 | 05 DEC 1986 | |
| International Searching Authority | Signature of Authorized Officer | |
| EUROPEAN PATENT OFFICE | M. VAN MOL  | |

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON

INTERNATIONAL APPLICATION NO.

PCT/GB 86/00435 (SA 14016)

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 27/11/86

The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|--------------------------------|------------------|
| GB-A- 668988 | | None | |
| GB-A- 1020571 | | None | |
| FR-A- 570916 | | None | |
| FR-A- 2547762 | 28/12/84 | None | |
| DE-B- 1017361 | | None | |
| US-A- 4440204 | 03/04/84 | None | |
| CH-A- 398948 | | DE-A- 1227635 FR-A- 1283558 | |
| GB-A- 809670 | | None | |
| DE-C- 146984 | | None | |

For more details about this annex :
see Official Journal of the European Patent Office, No. 12/82