

CONVENTION

AUSTRALIA

Patents Act 1990

NOTICE OF ENTITLEMENT

We, A/S CHR. FABERS FABRIKER of Hestehavevej 22, DK-5856 Ryslinge, Denmark, state the following in connection with Australian Application No. 56311/90:

1. The nominated person is the assignee of the actual inventor.
2. The nominated person is the applicant of the basic application.
3. The basic application was the application first made in a Convention country in respect of the invention.

Dated: 16 October 1991

By PHILLIPS ORMONDE & FITZPATRICK
Patent Attorneys for the Applicant
By:

David B Fitzpatrick

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To: The Commissioner of Patents

Our Ref: 231060

2146n



AU9056311

(12) PATENT ABRIDGMENT (11) Document No. AU-B-56311/90
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 632573

- (54) Title
APPARATUS FOR ASSEMBLING SLATS OF VENETIAN BLINDS
- International Patent Classification(s)
(51)⁵ E06B 009/266
- (21) Application No. : 56311/90 (22) Application Date : 17.04.90
- (87) PCT Publication Number : WO90/12947
- (30) Priority Data
- | | | |
|-------------|-----------|--------------|
| (31) Number | (32) Date | (33) Country |
| 1992/89 | 25.04.89 | DK DENMARK |
- (43) Publication Date : 16.11.90
- (44) Publication Date of Accepted Application : 07.01.93
- (71) Applicant(s)
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- (56) Prior Art Documents
EP 265564
US 4516300
- (57) Claim

1. A machine for production of finished lath packs for Venetian lath blinds, the superjacent laths of which have punched holes at least at the ends for draw cords and ladders consisting of bands or strings, every cross band of which carries a lath, and where one of two neighbouring cross bands of a ladder is placed on one side while the other is placed on the other side of a draw cord passed through the punched holes, which machine has a feed mechanism which inserts laths one by one over a cross band in the suspended ladders and at each of the suspended ladders a lifting mechanism which lifts the inserted lath and the ladders so that the next lath is inserted over the following cross band of the ladders as well as devices to retain the raised lath, wherein each lifting mechanism has a carrier with a slit through which the suspended ladder stretches and, on both sides of the slit, carrier faces sloping away from each other for supporting inserted laths, which carrier on an axis stretching across the lower side of the inserted lath can turn between one position where one carrier face supports the lath and another position where the other carrier face supports the

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next succeeding lath, which machine also has devices to swing the carriers from one end position to the other synchronously with the movement of the feed mechanism.

OPI DATE 16/11/90 APPLN. ID 56311 / 90

AOJP DATE 20/12/90 PCT NUMBER PCT/DK90/00098

PCT

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

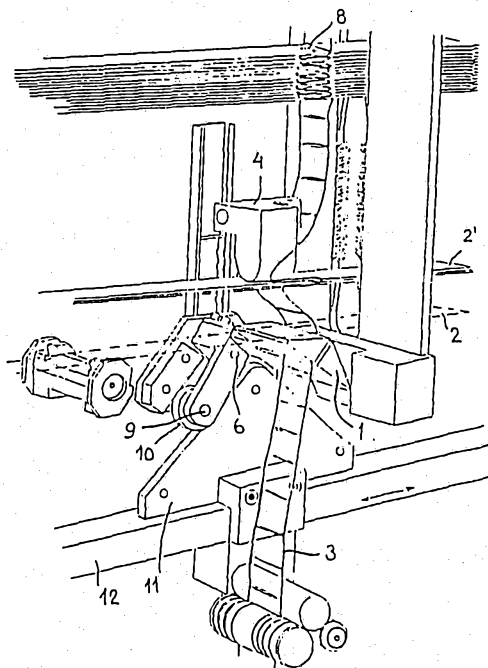
(51) International Patent Classification ⁵ : E06B 9/266	A1	(11) International Publication Number: WO 90/12947 (43) International Publication Date: 1 November 1990 (01.11.90)
(21) International Application Number: PCT/DK90/00098 (22) International Filing Date: 17 April 1990 (17.04.90) (30) Priority data: 1992/89 25 April 1989 (25.04.89) DK (71) Applicant (for all designated States except US): A/S CHR. FABERS FABRIKER [DK/DK]; Hestehøjvej 22, DK-5856 Ryslinge (DK). Nytorv 3 DK-1450 København K. (DK) (72) Inventor; and (75) Inventor/Applicant (for US only): HEBSGAARD, Jens, Ove [DK/DK]; Hestehøjvej 130, DK-5260 Odense S (DK). (74) Agent: MAGNUS JENSENS EFTF. PATENTBUREAU; Nytorv 3, DK-1450 København K (DK).		(81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), + CH, CH (European patent), CM (OAPI patent), DE, + DE (European patent), DK, DK (European patent), ES, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US. Published <i>With international search report.</i> <i>In English translation (filed in Danish).</i>



632573

(54) Title: APPARATUS FOR ASSEMBLING SLATS OF VENETIAN BLINDS**(57) Abstract**

A machine for production of finished lath packs for Venetian lath blinds, which have holes (8) at the ends for draw cords and ladders (3) consisting of bands or strings, every cross band of which carries a lath, and where two neighbouring cross bands of a ladder are placed on each side of the draw cord passed through the holes (8), which machine has a mechanism which inserts laths (2) one by one over a cross band in the suspended ladders (3) and at each ladder a mechanism (1) which lifts the inserted lath and the ladders (3) as well as devices to retain the raised lath. Each lifting mechanism has a carrier (1) with a slit through which the ladder (3) stretches and, on both sides of the slit, carrier faces (5) sloping away from each other for an inserted lath (2). The carrier can tilt in such a way that the carrier faces support the laths alternately. The carriers (1) are tilted synchronously with the movement of the feed mechanism. The carrier is thus used also for positioning the ladder with the consecutive cross bands placed on one and the other side alternately of the draw cord.



APPARATUS FOR ASSEMBLING SLATS OF VENETIAN BLINDS

The present invention relates to a machine for production of finished packs of Venetian blind laths of the kind described in the introduction to claim 1.

A machine of the said kind is known from US letters patent No. 4,516,300 where the ladder from a ladder supply is guided through a guide mechanism located under the inserted lath. In a further not specified manner this guide mechanism can be tilted from one end position to another whenever the inserted lath and the ladder are lifted so that the ladder cross band is placed on one and the other side alternatively of the draw cord.

According to this invention there is provided a machine for production of finished lath packs for Venetian lath blinds, the superjacent laths of which have punched holes at least at the ends for draw cords and ladders consisting of bands or strings, every cross band of which carries a lath, and where one of two neighbouring cross bands of a ladder is placed on one side while the other is placed on the other side of a draw cord passed through the punched holes, which machine has a feed mechanism which inserts laths one by one over a cross band in the suspended ladders and at each of the suspended ladders a lifting mechanism which lifts the inserted lath and the ladders so that the next lath is inserted over the following cross band of the ladders as well as devices to retain the raised lath, wherein each lifting mechanism has a carrier with a slit through which the suspended ladder stretches and, on both sides of the slit, carrier faces sloping away from each other for supporting inserted laths, which carrier on an axis stretching across the lower side of the inserted lath can turn between one position where one carrier face supports the lath and another position where the other carrier face supports the next succeeding lath, which machine also has devices to swing the carriers from one end position to the other synchronously with the movement of the feed mechanism.

Designing the device according to the invention as

described above has the result that the same machine element, i.e. the carrier, is utilized for both lifting the inserted laths and guiding and placing the ladder correctly, i.e. with the consecutive cross bands placed on one and the other side alternatively of the draw cord.

The devices used to swing the carriers synchronously with the insertion of laths may, for example, include drives activated by a switch mounted in the feed path for the laths. However, a simpler and more dependable design is shown in claim 2.

In what follows, the invention is described further in connection with the drawing where

Fig. 1 shows the parts of a machine for production of Venetian lath blinds after insertion of a lath, which parts are important to the invention, and

Fig. 2 shows the same parts, but after insertion of the following lath.

The machine shown on the drawing includes a number of identical work stations, viz. a station for each ladder band with which the Venetian lath band is to be provided depending on the dimensions of the laths.

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Each work station has carrier 1 to support the last inserted lath 2 in a known way which is irrelevant to the invention. The carrier 1 has a slit through which a ladder 3 consisting of bands or strings stretches downward from previously inserted laths 2' and/or a separate holder 4 to a ladder supply not shown. On both sides of the slit the carrier 1 has carrier faces 5 which slope away from each other on both sides of the slit and turn on an axis 6 stretching across the lower side of the inserted lath 2. The carrier 1 can be swung between a position in which one carrier face 5 supports a lath 2 and another position in which the other carrier face supports a lath. The swing is effected in a way described later so that the two carrier faces alternately support consecutive laths. The carrier 1 lifts the lath 2 so that it is gripped by pawls 7 in a magazine, and when the carrier moves down it is turned because of the special design of the guide plate 11. On account of the swing the suspended ladder is moved at the same time so that the cross bands are on one and the other side alternately of a punched hole 8 in laths 2,2'.

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A downward arm 9 is fixed to the carrier 1 of the shown embodiment. A roller 10 which works together with a guide plate 11 is fixed to the lower end of the arm. The guide disc is fixed to a push bar 12 which can reciprocate synchronously with the feed mechanism for laths 2,2', not shown. The guide plate 11 is designed in such a way that the carrier 1 is swung as described above whenever a lath 2 is inserted and supported by a carrier face 5.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A machine for production of finished lath packs for Venetian lath blinds, the superjacent laths of which have punched holes at least at the ends for draw cords and ladders consisting of bands or strings, every cross band of which carries a lath, and where one of two neighbouring cross bands of a ladder is placed on one side while the other is placed on the other side of a draw cord passed through the punched holes, which machine has a feed mechanism which inserts laths one by one over a cross band in the suspended ladders and at each of the suspended ladders a lifting mechanism which lifts the inserted lath and the ladders so that the next lath is inserted over the following cross band of the ladders as well as devices to retain the raised lath, wherein each lifting mechanism has a carrier with a slit through which the suspended ladder stretches and, on both sides of the slit, carrier faces sloping away from each other for supporting inserted laths, which carrier on an axis stretching across the lower side of the inserted lath can turn between one position where one carrier face supports the lath and another position where the other carrier face supports the next succeeding lath, which machine also has devices to swing the carriers from one end position to the other synchronously with the movement of the feed mechanism.

2. A machine as claimed in claim 1, wherein a downward arm and a curve roller are fixed to each carrier and devices swinging by the carriers include a push bar reciprocated by the feed mechanism under the inserted laths, to which push bar guide plates are fixed which work together with the said curve rollers.

3. A machine substantially as hereinbefore described and illustrated.

DATED: 28 October, 1992

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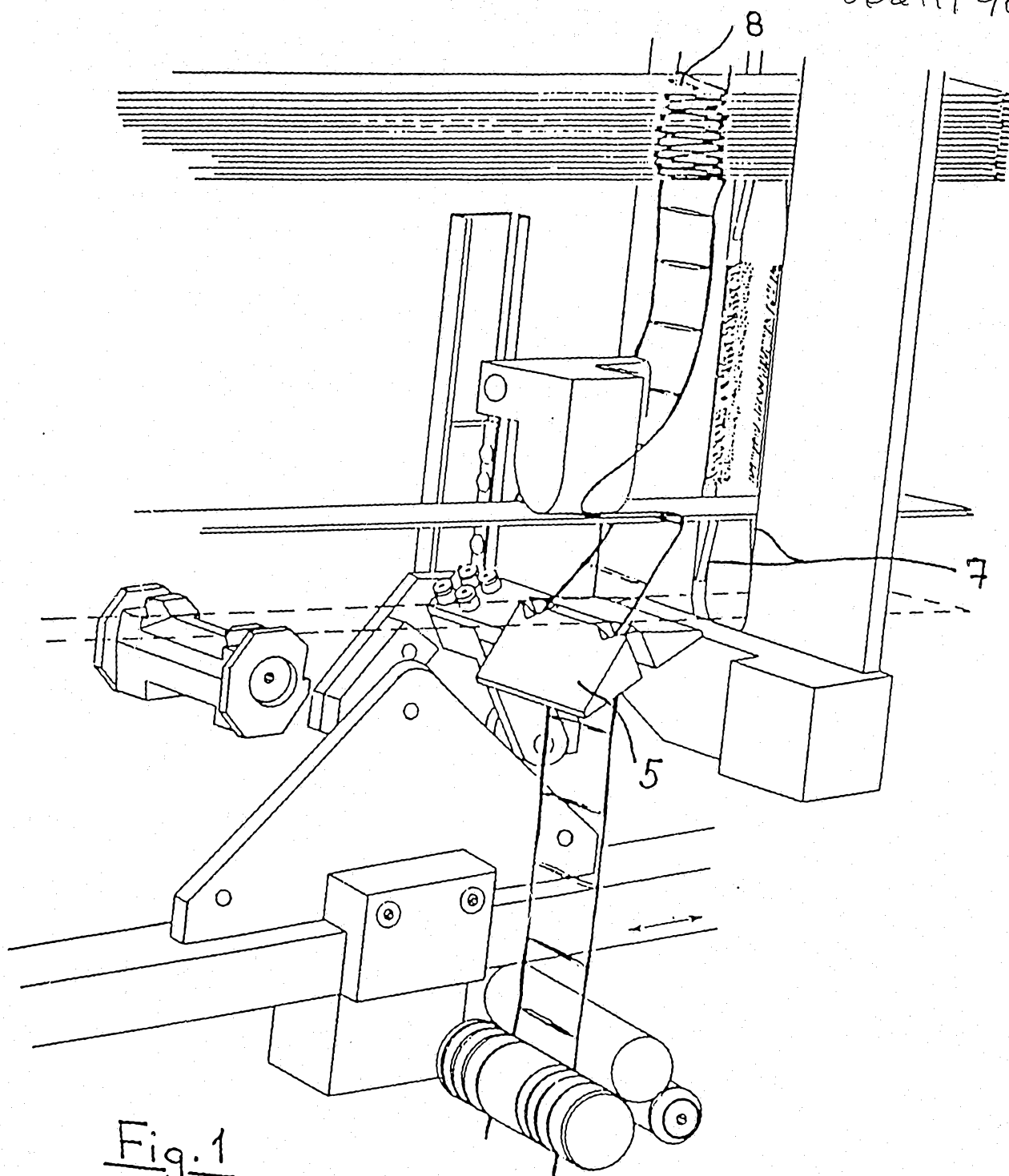
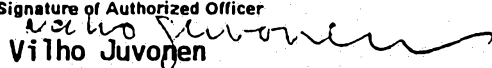


Fig. 1

Fig. 2

INTERNATIONAL SEARCH REPORT

International Application No PCT/DK 90/00098

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC5: E 06 B 9/266		
II. FIELDS SEARCHED Minimum Documentation Searched⁷		
Classification System	Classification Symbols	
IPC5	E 06 B	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched ⁸		
SE,DK,FI,NO classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	US, A, 4516300 (GAILLARD ET AL) 14 May 1985, see figure 2 detail 26 --	1
A	SE, C, 301042 (E.G. NILSSON) 20 May 1968, see claim 1 --	
A	SE, C, 323787 (S.A. NILSSON) 11 May 1968, see figure 6 detail 46 -- -----	
* Special categories of cited documents:¹⁰ "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "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) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "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 "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step "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. "&" document member of the same patent family		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
6th July 1990	1990 -07- 1 6	
International Searching Authority	Signature of Authorized Officer	
SWEDISH PATENT OFFICE	 Vilho Juvonen	

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. PCT/DK 90/00098**

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 Swedish Patent Office EDP file on **90-05-24**
The Swedish 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
US-A- 4516300	85-05-14	DE-A- 3475418 EP-A-B- 0133759	89-01-05 85-03-06
SE-C- 301042	68-05-20	NONE	
SE-C- 323787	68-05-11	NONE	