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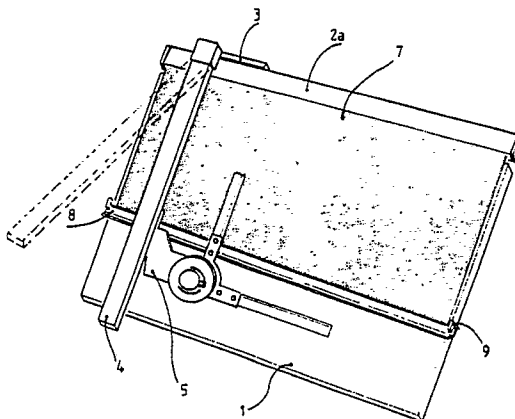
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## EUROPEAN PATENT APPLICATION

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**CH DE FR LI**(71) Applicant: **I.T.O. di TRASPADINI Gianluigi**  
**Via della Streccia, 34**  
**I-21040 Venegono Superiore(IT)**(72) Inventor: **Traspadini, Gianluigi**  
**Via della Streccia 34**  
**I-21040 Venegono Superiore(IT)**(74) Representative: **Pellegrini, Alberto et al**  
**c/o Società Italiana Brevetti S.p.A. Piazza di**  
**Pietra 39**  
**I-00186 Roma(IT)**(54) **Roller blind for drawing table.**

(57) Drawings and projects being elaborated, resting on the surface of a drawing board (1) are protected from dust and dirt and are concealed from the sight of occasional unauthorized persons which may be passing by or standing near the drafting machine by a roller blind (7), e.g. of fabric reinforced PVC, which disappears inside a tubular roller guard body (15) which may be fixed along one side of the board. The guard body and the rewinding mechanism of the

roller blind may be "integrated" in a top guide for the horizontal carriage (3) of a drafting machine. Alternatively the roller guard body may be hingedly or unhingedly fixed to the bottom side of the drawing board and may be configured so as to provide a shelf (16) for drawing instruments. Rewinding of the blind is preferably obtained by a helicoidal torsional spring mechanism (12).



**FIG. 2**

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## ROLLER BLIND FOR DRAWING TABLE

Modern drawing tables, beside a support structure (base, shelves' frame, etc.) and different adjustment devices (pedals, counterweights, locking and unlocking mechanisms, etc.), comprise, as shown in Fig. 1, a drawing board 1, on the top side of which is usually present a guide 2 for a carriage 3 carrying a vertical guide 4 provided with a lower rest wheel (not visible in the figure) and along which a vertical carriage 5 carrying a goniometer and the couplings for the rulers runs.

The work at a drawing table is often characterized by frequent interruptions: from daily stops of working hours and/or for attending to other priority functions, such as receiving clients, to longer interruptions for vacation and holidays, etc.. During these interruptions and generally in proportion to the length of the interruption, swelling and other deformations of the drawing sheet left on the drawing board due to temperature and humidity changes may be observed together with an accumulation of dust and dirt on the sheet which is often attracted by electrostatic charging induced by the rubbing of the drawing paper. Moreover in design offices in general the visit of extraneous personnel is often inevitable and therefore important projects may remain incautiously exposed on the drawing table for too long periods of time.

An objective of the present invention is to provide a practical roller blind for a drawing table, which blind may effectively protect the drawings from dust and dirt during the periods when they are left on the drawing table as well as to discreetly block the view of projects being elaborated to unauthorized persons which may be passing by or standing for considerable time in view of the drawing table.

These and other objectives and advantages of the device object of the present invention will become evident through the following detailed description of several preferred embodiments, shown for purely illustrative and nonlimitative purpose in the attached drawings, wherein:

**Fig. 1** is a partial, perspective, schematic view of a modern drawing table;

**Fig. 2** is a partial schematic perspective view of a drawing table embodying a roller blind in accordance with the present invention;

**Fig. 3** is a partial, cross sectional view along the section plane III-III of Fig. 2;

**Fig. 4** is a partial, schematic, partially exploded view of a roll-up mechanism of the roller blind of the present invention;

**Fig. 5** is a partial, cross sectional view of a drawing table having a roller blind in accordance with an alternative embodiment of the invention;

and

**Fig. 6** is a partial, schematic view of a modified embodiment of the device depicted in Fig. 5.

For simplicity's sake, the same or equivalent parts are indicated by the same number in all the figures.

According to a first embodiment of the invention, shown in Figures 2 and 3, the horizontal top guide 2 of a normal drafting machine (shown in Fig. 1) is replaced by a guide-blind roll housing 2a, provided with a longitudinal slot 17 through which a blind 7 disappears inside the housing 18 of the special guide body 2a, upon winding on a roller 6 which is contained therein. Such a horizontal guide body 2a may be easily fabricated by extrusion with aluminum or similar material, thus providing to form a guide profile which may be at least partially similar to the guide profile of a top horizontal guide 2 of a conventional drafting machine, i.e. capable of receiving the wheels 3a and 3b of the top carriage 3 of the drafting machine. The extruded body may also be conveniently provided with a "T" section channel 2b capable of receiving a mating "T" projection of brackets 19 for assembling the guide body 2a on the top edge of the drawing board 1 of the table. The slot 17 of the guide body 2a has a spacing ridge 2c over which the blind screen 7 runs when it is pulled unwound from the roller 6 and this ridge 2c is set so as to facilitate the pulling of the screen 7 over the drawing board at a certain distance from the surface of the board in order to avoid the rubbing of the screen on the surface of the drawing paper. The free extremity of the blind screen 7 is conveniently provided with a reinforcing rod or with a rigid metal bar 8, preferably having an "L" shaped profile so as to form a grip for making easier the pulling of the blind 7 over the drawing board, unwinding it from the roller 6 in opposition to the force exerted by a rewind spring.

As shown in Fig. 2, near the bottom edge of the drawing board 1 of the table, or along the two sides of the board 1, suitable hooks 9 are provided for anchoring the two ends of the grip bar 8 in order to keep the extended blind from rewinding back on the spring loaded roller 6. One or more pairs of hooks 9 may be fixed along the sides of the drawing board 1 for engaging the opposite ends of the reinforcing rod or grip bar 8 which purposely extend beyond the edge of the blind screen 7 and of the drawing board 1. Of course other and/or different retaining means will be easily contrived by a skilled technician.

As shown in Fig. 4, the rewinding mechanism of the blind screen 7 on the roller 6 preferably comprises a shaft 10, solidly connected through a

nonrotatable joint on at least an end flange or cap 13 of the guide body 2a. The roller 6, through a coupling tooth (not shown in the figure) is rotatably coupled to a sleeve 11 which is free to rotate (together with the roller 6) about the shaft 10.

A helical torsional spring 12 is mounted over the shaft 10 and has a first extremity 12a connected to the shaft 10 while the opposite extremity is fixed to the sleeve 11, which is also free to move axially along the shaft 10 and the roller 6 (the coupling tooth of which being able to run inside the longitudinal guide 11a present on the sleeve 11).

The operation of such a rewind mechanism is well known. During the assembly of the mechanism the torsional spring 12 will be pre-torsioned in order to exert a certain return force also when the blind 7 is completely wound on the roller 6.

Preferably, the slot 17 of the guide body 2a is provided with a small longitudinal brush 14, which is mounted so as to be easily replaced periodically upon wear and deformation, for detaching particles which may have adhered to the surface of the blind screen 7 during rewinding of the latter on the roller 6. Preferably such a brush will contain metallic whiskers for preventing induction of static charges on the blind 7 which could attract and retain dust particles and/or erasing rubber particles.

A further embodiment is depicted in Fig. 5. This alternative embodiment is particularly suitable for retrofitting an existing drafting table without substituting or modifying the horizontal top guide of the drafting machine, when such is present or in the case of traditional, balance-type, drafting machines.

According to this alternative embodiment of the invention, the roller guard body is fixed to the bottom edge of the drawing board 1 and the blind screen 7 is extended from the bottom to the top of the table.

The guard body 15 which contains the winding roller 6 of the blind 7 may be made by an extruded aluminum bar having a profile as depicted in Fig. 5. The profile may already be shaped so as to be easily fastened to the bottom portion of the drawing board 1 by means of screws 19, by providing for the use of eventual spacers over the fixing flange portion to account for different thicknesses of the drawing board 1. the guard body 15 is preferably provided with an appendix 16 having a shape suitable to act as a shelf for drawing instruments.

In yet another modified embodiment of the invention, schematically shown in Fig. 6, the roller guard body 15 may also be hinged at the point 18 to the flange portion 20 in order to be able to drop down the roller guard body for removing accumulated debris and dirt. Of course when the blind must be used, the guard body 15 will be raised and blocked in a working position by means of

hooks or by means of a central stop mechanism fixed on the back of the board (not shown in the figure).

In the two figures 5 and 6 the profile of the rest wheel 4a at the bottom of the vertical guide 4 of the drafting machine may be seen.

The blind screen 7 may be a sheet or a cloth of nylon, polythene or other flexible and opaque material such as a sheet of polyvinylchloride (PVC) loaded with an opacizer material and/or coupled with a reinforcing fabric. Essentially the blind screen 7 will be opaque in order to impede the vision of a drawing affixed on the drawing board.

The roller blind of the invention may also be useful for implementing various safety systems which, by contemplating a block of the extended blind, detect (if not prevent) an eventual unauthorized lifting of the blind. Locks and other blocking devices, as well as electronic alarm systems may be easily contrived and utilized for implementing such systems.

The unwinding and the rewinding of the blind may also be motorized by using a geared-down electric motor.

Of course the roller guard body may also be mounted along one side of the drawing table and the blind may be extended horizontally across the board.

## Claims

1. A drawing table having a drawing board on which drawing sheets are affixed, characterized by having a blind screen for concealing the surface of said drawing board comprising
  - a winding roller, along a generatrix of which one end of a blind screen is fixed, mounted inside a substantially tubular guard body having a longitudinal slot through which said blind screen disappears inside said guard body by winding around said roller;
  - said tubular guard body being provided with fastening means for fixing said guard body to one side of said drawing board;
  - said blind screen unwinding itself from said roller by running over a ridge of said guard body parallel to said longitudinal slot thereof and over the surface of said drawing board until the free end of said blind screen reaches the opposite side of said board;
  - means for blocking the blind screen in an extended position; and
  - means for rewinding said blind sheet on said roller inside said guard body.

2. The drawing table according to claim 1, characterized by the fact that said means for rewinding are formed by a shaft nonrotatably fixed to

said guard body and coaxially placed inside said roller which is rotatable about said shaft;

a helicoidal torsional spring being placed over said shaft and having one end fixed to the shaft and the other end fixed to said roller;

said helicoidal spring winding and unwinding itself around said shaft upon the relative rotation of said roller about said shaft and the spring elastic memory being used for exerting a returning tension on said blind screen unwound from said roller capable of rewinding the blind screen on the roller upon release of the latter.

3. The drawing table according to claim 1, characterized by the fact that said guard body is provided with a brush positioned along said longitudinal slot through which said blind screen disappears inside said guard body, capable of rubbing off the surface of the blind screen facing toward the surface of the drawing board dirt particles which may have adhered to the screen.

4. The drawing table according to claim 3, wherein said brush has antistatic metallic whiskers.

5. The drawing table according to claim 1, wherein said guard body is fixed to the top side of the drawing board and said means for retaining the free end of the blind screen are fixed to the opposite lateral sides of the drawing board near the bottom side thereof;

said guard body being provided with a guide capable of receiving the running wheels of a horizontal carriage of a drafting machine.

6. The drawing table according to claim 1, wherein said guard body is fixed to the bottom side of said drawing board and is provided with a longitudinal appendix having the shape of a shelf for containing drawing implements;

said means for retaining the free end of the blind screen being fixed on the opposite lateral sides of the drawing board near the top side of the latter.

7. The drawing table according to claim 1, wherein said means for retaining the free end of the rewinding blind screen comprise pairs of hooks fixed, respectively, to the opposite lateral sides of the drawing board and which are engaged by respective projecting ends of a rigid reinforcing bar fixed along the free end of said blind screen.

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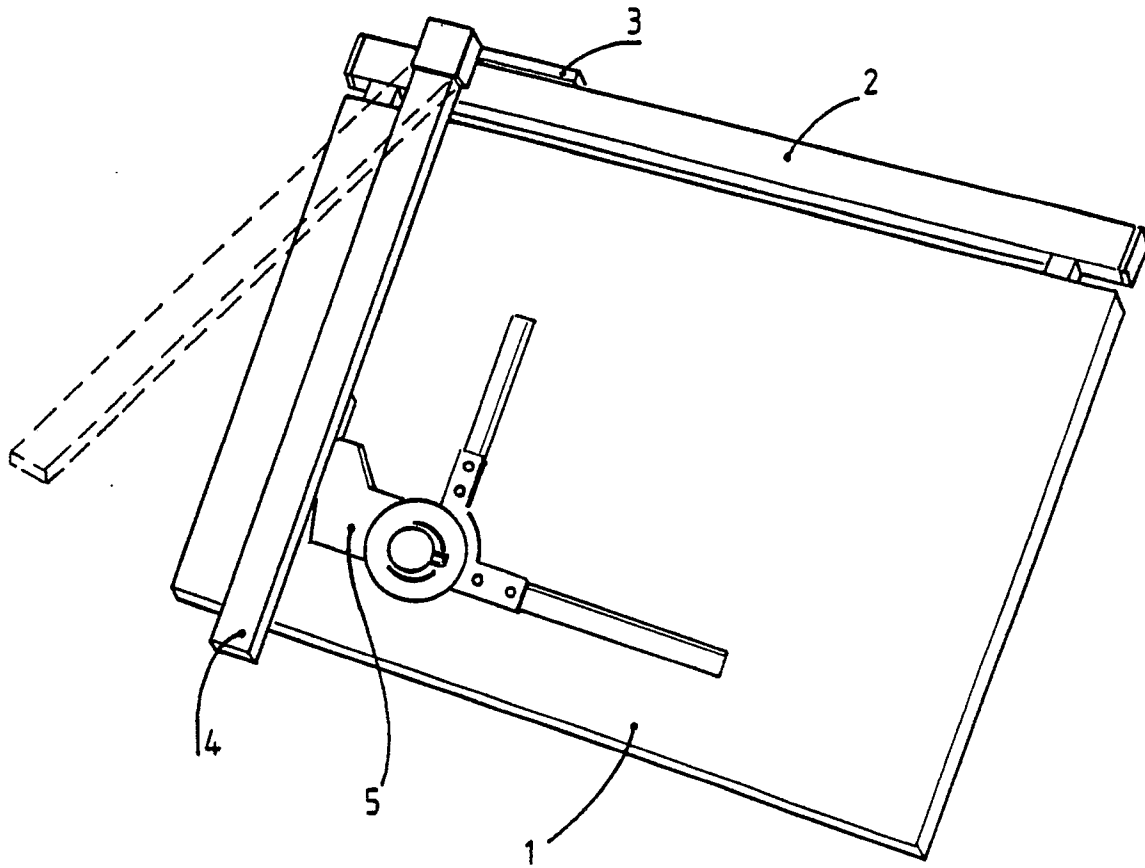


FIG.1

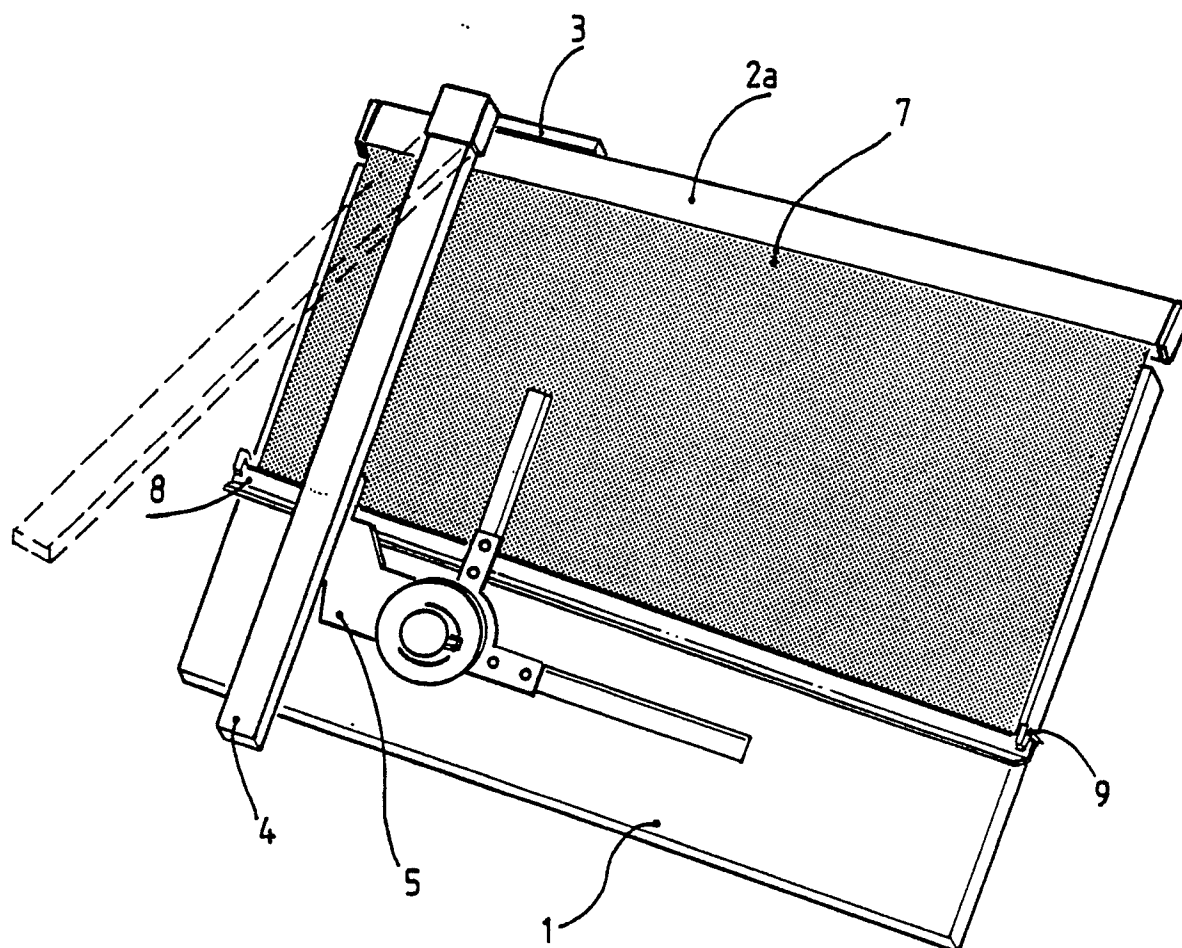
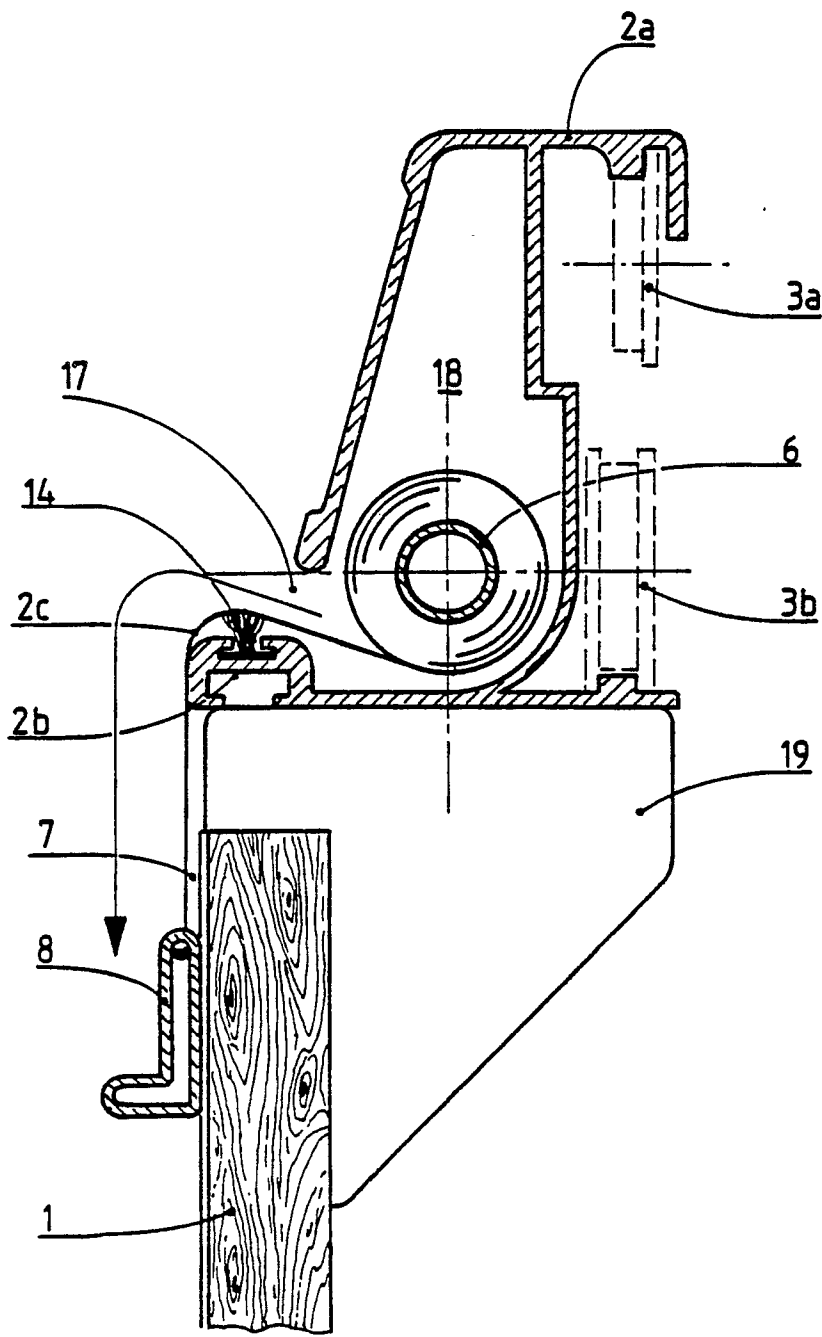
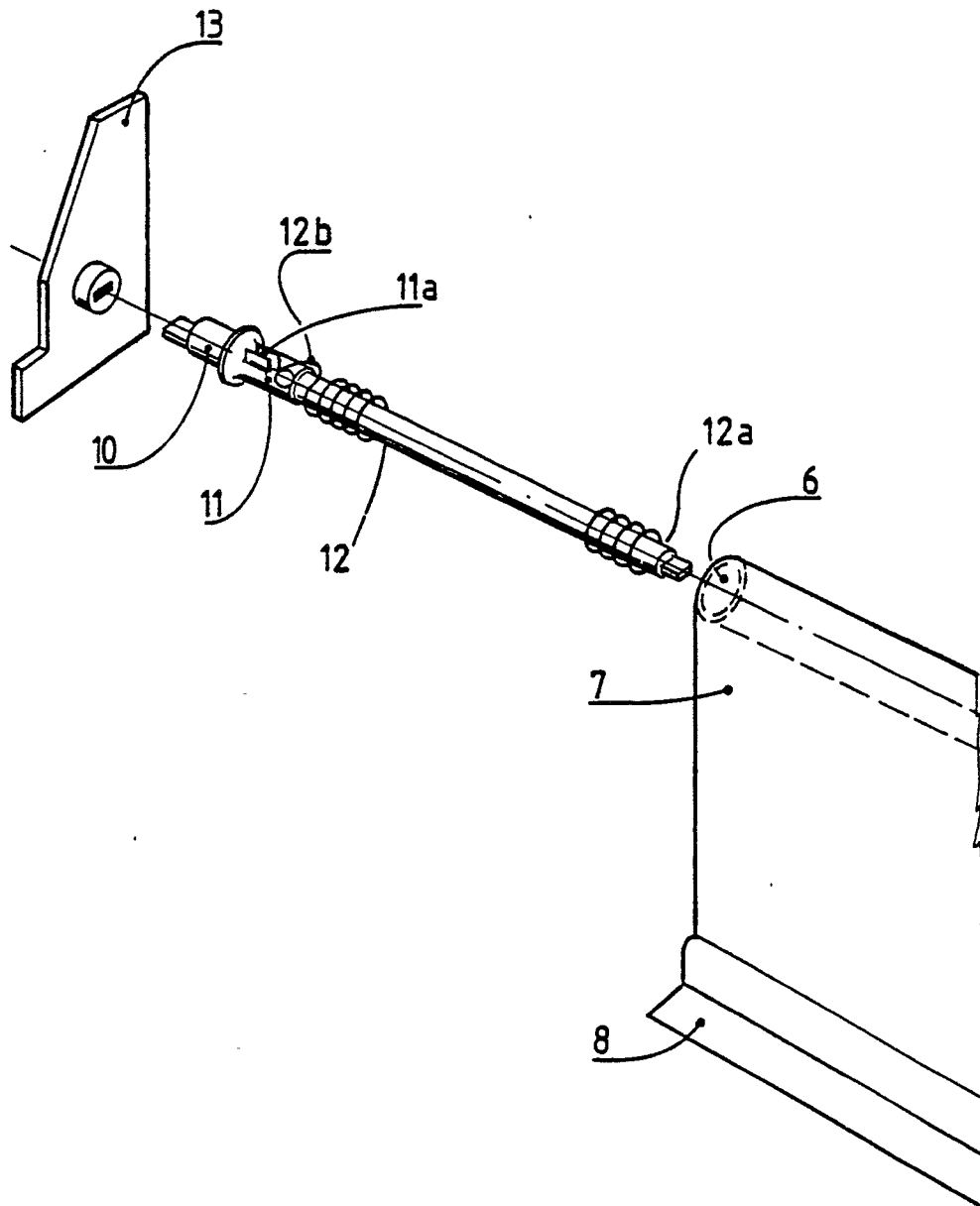


FIG. 2

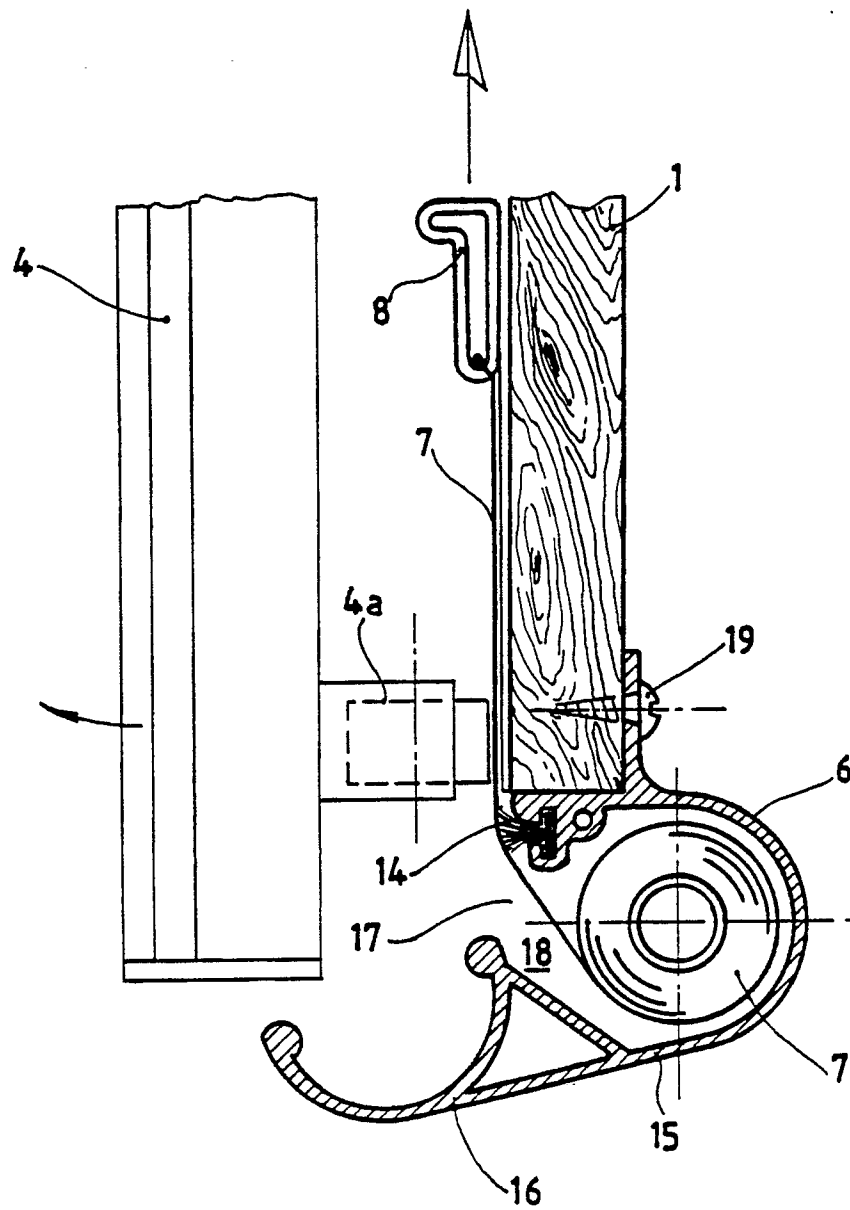


**FIG. 3**

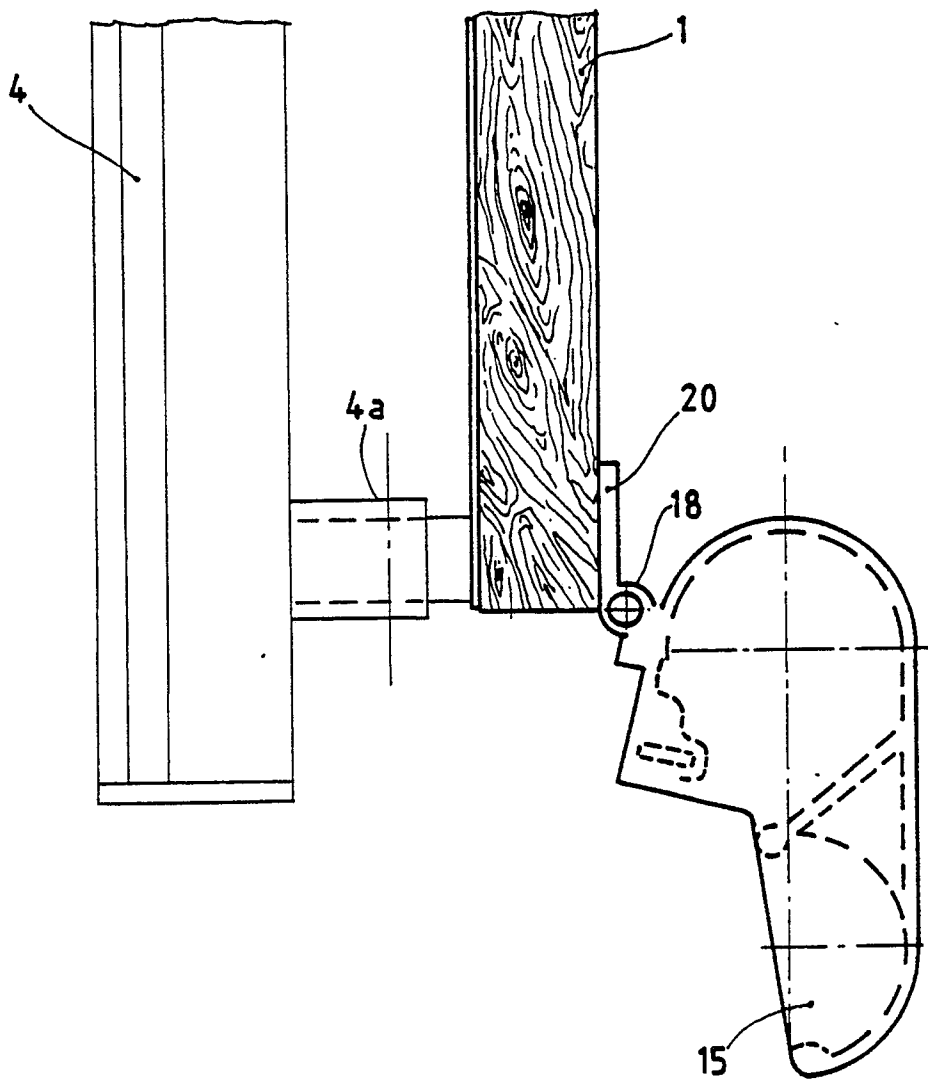


**FIG. 4**





**FIG. 5**



**FIG. 6**



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## EUROPEAN SEARCH REPORT

Application Number

EP 90 83 0223

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2539601 (WILD LEITZ) * page 1, line 1 - page 6, line 2; figures 1, 2 *	1, 2, 6, 7	B43L5/00
Y	---	3	
A	---	5	
Y	US-A-4357978 (KELLER ET AL.) * column 4, lines 55 - 60 * * column 5, lines 18 - 33; figures 1-3 *	3	
X	US-A-3220661 (HEGEDUS) * the whole document *	1	
Y	---	5	
Y	GB-A-2066163 (BECKETT) * page 1, lines 5 - 51; figure 1 *	5	
A	US-A-2699627 (MATTHEWS) * the whole document *	1, 5	
A	FR-A-2514816 (FERMETURES HENRI PEYRICHOU) * page 6, lines 7 - 11; figures 4, 5, 8 *	3	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B43L E06B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03 SEPTEMBER 1990	Examiner PERNEY Y.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			