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(12) # EUROPEAN PATENT APPLICATION

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(71) Applicant: **Ditta Maller snc di Mallozzi Erasmo & C.**
Via Roma 69 bis
I-43056 San Polo di Torrile (Parma)(IT)

(72) Inventor: **Mallozzi Cosmo**
via Migliori 6
Parma(IT)

(74) Representative: **Sassatelli, Franco T. et al,**
c/o INIP Via Mazzini N. 170
I-40139 Bologna(IT)

(54) **Machine for performing rectilinear furrows with pressure and inking.**

(57) On the travel plane (1), the panel passess under a battery (5) of furrowing disks in parallel and at distances to preset, brought on a shaft (11) in horizontal position supported by a frame tolower in a controlled way on coaxial parts (6,7). A motor assembly drives an input as well as an outlet roller (35), and centrally a location one (4) for the above furrowing assembly which, by means of pulleys, drives an inking device. Inking is performed by means of a corresponding battery of ink holders through rollers, pen and inking device, on the furrowing disks.

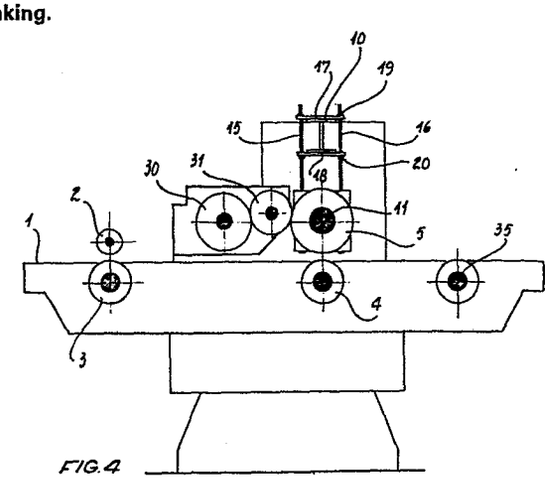

FIG.4

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Machine for performing rectilinear furrows with pressure and inking.

The invention refers to a machine which, with a continuous cycle, permits to obtain parallel furrows on panels, operating by pressure effect only. A nex design procedure allows a particular employ in the prefabricated building and arrangements in general. Conventionally panels are produced resulting from assembling of plates on woody fibrous base with PVC film or resinous paper sheet.

At present, in order to obtain a depth ornamental effect, parallel furrows are obtained by passing the panel under a battery of milling disks. This system casuses two inconveniences: it interrupts the structure continuity on the visualization plane and weakens it on account of the material removal. These inconveniences turn out particularly heavy if we consider that these panels are made in extremely small thickness.

The invented device permits the integral solution of these problems. A machine is employed with base casting on the ground bearing a travelling plane for passing the panel under a device for making parallel furrows. This is foreseen on a pair of columns with coaxial disposition to allow a lowering to be regulated in order to bring a frame in a transversal position and bringing the pressure furrowing assembly in operating position. The device employ a shaft with parallel threading for setting a battery of pressing disks at distances to be preset. By means of a crank operating on a cardan system, the movement is transmitted in a synchronism with the two coaxial devices. The motor assembly is then started that contemporarily moves a pair of input rollers on the travelling plane, as

well as another output pair, and centrally a roller to locate the said furrowing group which, by means of the corresponding battery of pulleys brought on the shaft, strarts a corresponding battery on inking means. Inking is carried out by transmission from the relevant ink holders, by means of rollers, pen and inking device, on the furrowing disks.

A not limiting execution form is illustrated in the drawings of Tables 1 and 2, where Fig. 1 is the side perspective view of the machine seen from the outlet side, with a section view of the outgetting panel. The frame can be noted, which is supported on coaxial means and with controlled lowering by means of a hand crank, as well as the furrowing assembly brought in middle location by a positioning frame. A system of pulleys is to be seen too, which drives a battery of inking means transmitting on the pressure rollers. Fig. 2 is the front view of the feft outlet part of the machine; the system for the furrowing device stabilization will be noted. Fig. 3 is a particular of the travelling plane on the right input side. The furrowing articolated initial part, with the inking device, and the input roller can be noted. Fig. 4 is the longitudinal section of the machine showing the motion compartments.

The machine foresees the panel mechanical travel on plane 1 by means of roller 2, which has below the location roller 3. The operation is carried out by pressure while the panel is passing between the lower location roller 4 and the above pressure compartment consisting of a parallel disk group 5. These disks perform the two tasks of furrowing by means of squeezing, as well as of inking in the relevant cavities. The pressure disks 5 are supported on a frame with vertical translation on a pair of side coaxial devices 6 and 7: these ones, through crank 8 and with a transmission cardan system 9, with contemporary effect, lower frame 10 supporting shaft 11 and ball bearing with pressing battery 5 fitted on. For stabilizing the furrowing device, an intermediate connection between the frame transversal profile piece 12 and shaft 11 has been foreseen. Plate 13 equipped with ball bearing 14 is employed for rotating shaft 11 and suppor

5. These disks perform the two tasks of furrowing by means of squeezing, as well as of inking in the relevant cavities.

6) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the pressure disks 5 are supported on a frame with vertical translation on a pair of side coaxial devices 6 and 7: these ones, through crank 8 and with a transmission cardan system 9, with contemporary effect, lower frame 10 supporting shaft 11 on ball bearing with pressing battery 5 fitted on. For stabilizing the furrowing device, an intermediate connection between the frame transversal profile piece 12 and shaft 11 has been foreseen. Plate 13 equipped with ball bearing 14 is employed for rotating shaft 11 and supported on threaded columns 15 and 16, with locating bases 17 and 18 on profile 12 and fixed by means of nuts 19 and 20.

7) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the inking compartment, near the pressing devices, employs a corresponging battery of pulleys 21 on 11, near the pressors; by means of belts 22, these pulleys move wheels 23 and 24, which in their turn being fitted on shafts 25 and 26 (mounted on bearing 27 and 28 in the inkstand 29 structure) move in synchronism the roller assembly consisting of pen 30 and inking devices 31 which are transmitting on pressing and inking rollers 5.

8) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the pressing disks 5 may be fitted, with changing position, on shaft 11 having a parallel threading by means of the counterposed pair of discoidal stabilizers 32 and 33, which are containing the interposed disk 5 through screws 34.

9) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the movement of the operating compartment is performed by a motor assembly containde in

the base casting, moving at the same time the imput rollers 2 and 3, shaft 11, its location 4 and the outlet roller 35 by a chain transmission.

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Claims.

1) Machine for performing rectilinear furrows with pressure and inking, characterized by the fact that the machine is employed with base casting on the ground bearing a travelling plane for passing the panel under a device for making parallel furrows. This is foreseen on a pair of columns with coaxial disposition to allow a lowering to be regulated in order to bring a frame in a transversal position and bringing the pressure furrowing assembly in operating position.

2) Machine for performing rectilinear furrows with pressure and inking, according to the previous claim, characterized by the fact that the device employs a shaft with parallel threading for setting a battery of pressing disks at distances to be reset.

3) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that by means of a crank operating an a cardan system, the movement is transmitted in synchronism with the two coaxial devices.

4) Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the motor assembly is then started that contemporarily moves a pair of input rollers on the travelling plane, as well as another output pair, and centrally a roller to locate the said furrowing group which, by means of the corresponding battery of pulleys brought on the shaft, starts a corresponding battery of inking means.

5)Machine for performing rectilinear furrows with pressure and inking, according to the previous claims, characterized by the fact that the machine foresees the panel mechanical traverl on plane 1 by means of roller 2, which has below the location roller 3. The operation is carried out by pressure while the panel is passing between the lower location roller 4 and the above pressure compartment consisting of a parallel disk group

ted on threaded columns 15 and 16, with locating bases 17 and 18 on profi lel2 and fixed by means of nuts 19 and 20. The inking compartmens, near the pressing devices, employs a corresponding battery of pulleys 21 on 11, near the pressers; by means of belts 22, these pulleys move wheels 23 and 24, which in their turn being fitted on shafts 25 and 26(mounted on bearings 27 and 28 in the inkstand 29 structure) move in synchronism the roller assembly consisting of pen 30 and inking devices 31 which are transmitting on pressing and inking rollers 5. The pressing disks 5 may be fitted, with changing position, on shaft 11 having a parallel threading by means of the counterposed pair of discoidal stabilizers 32 and 33, which are containing the interposed disk 5 through screws 34. The movement of the operating compartment is performed by a motor assembly contained in the base casting, moving at the same time the input rollers 2 and 3, shaft 11, its location 4 and the outlet roller 35 by a chain transmission.

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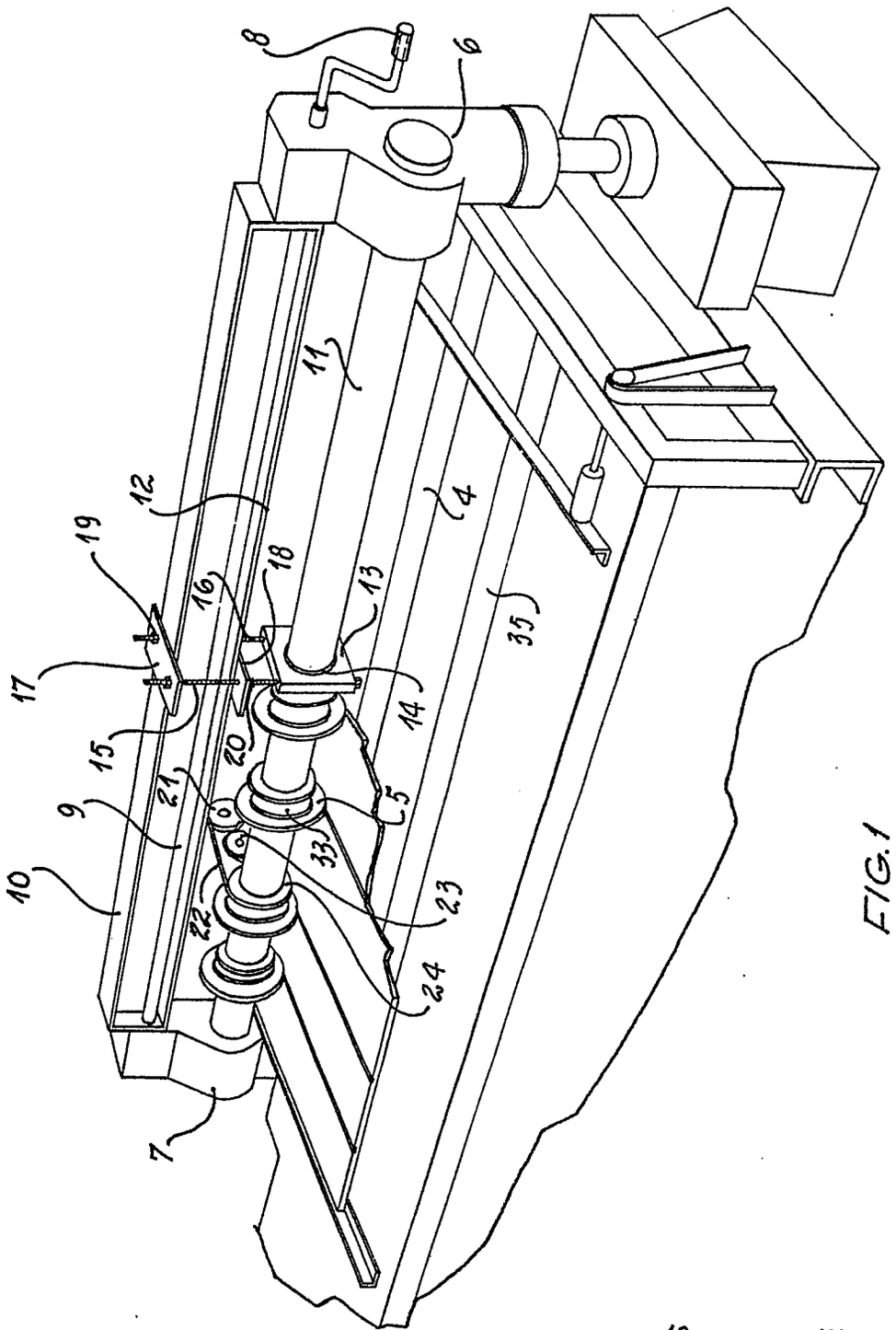

FIG.1

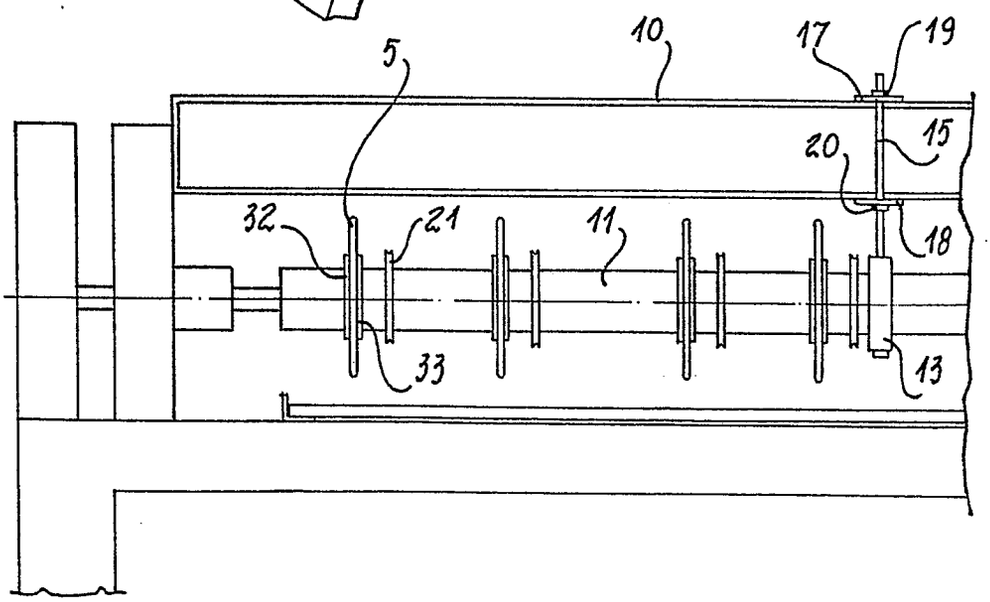

FIG.2

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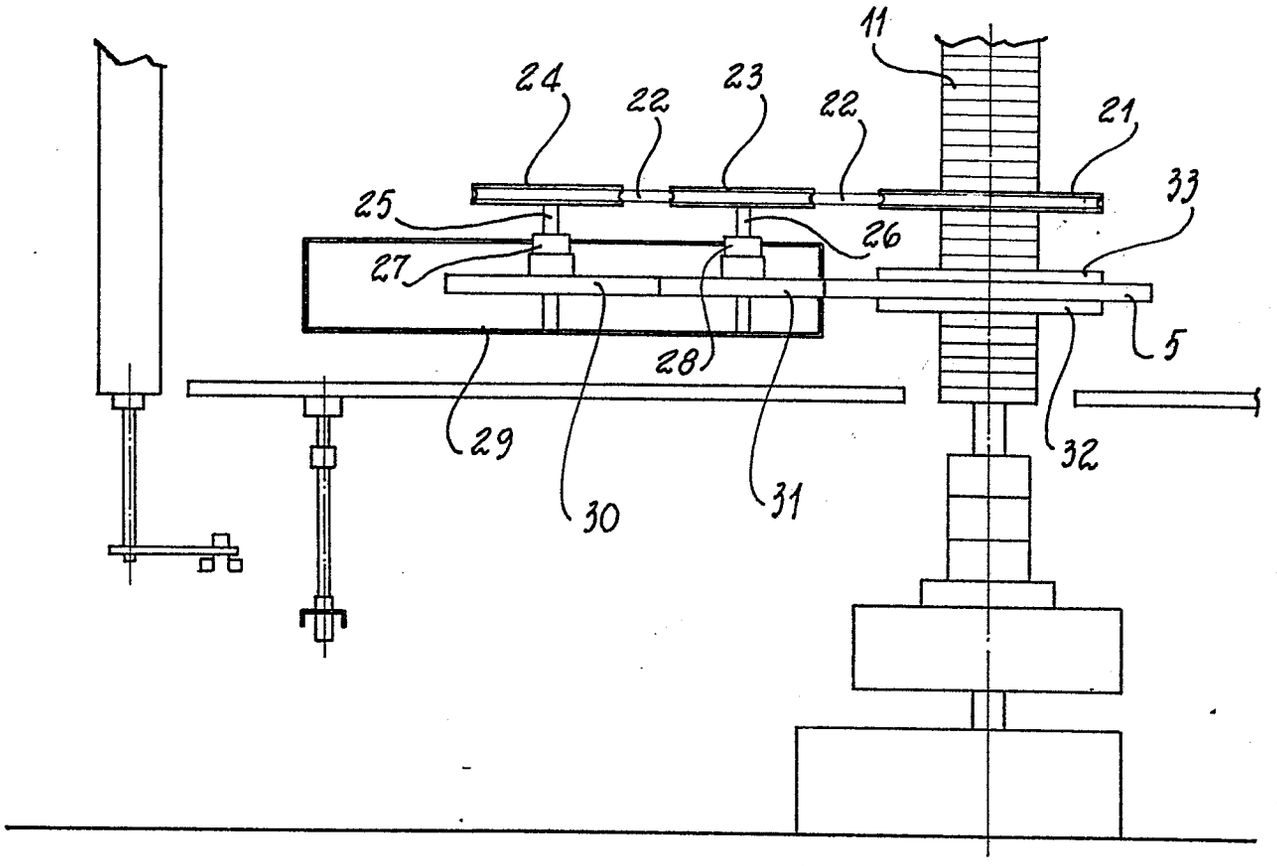

FIG. 3

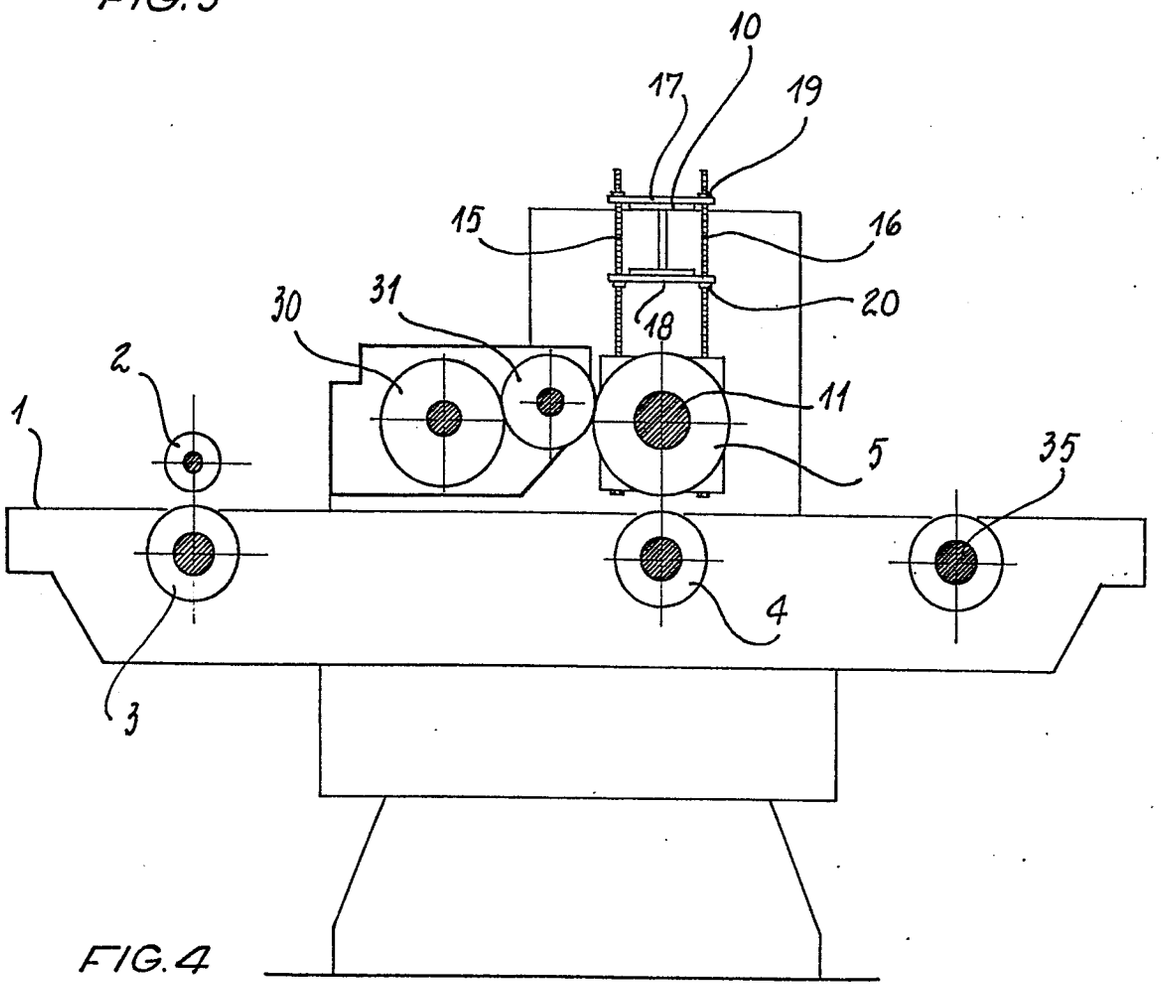

FIG. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application number
EP 82 83 0301

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. ³)
Y	GB - A - 858 923 (DORNBUSCH) * The whole document * --	1,2,3, 6	B 41 F 19/02
Y	FR - A - 445 331 (KING) * The whole document * --	1,2,3, 6	
Y	US - A - 2 604 038 (YORK) * The whole document * --	1,2,3, 6	
Y	FR - A - 2 334 439 (AMELOT) * The whole document * ----	3,6	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) B 41 F B 44 C B 44 B

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
The Hague	18-08-1983	MEULEMANS

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
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P : intermediate document

T : 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

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid,

namely claims:

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

☒ LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.
namely:

1. Claims 1,2,3,6: a machine for decorating panels
2. Claims 4,5,8,9: a feeding system
3. Claim 7: an inking device

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.

namely claims:

☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

namely claims: 1,2,3,6.