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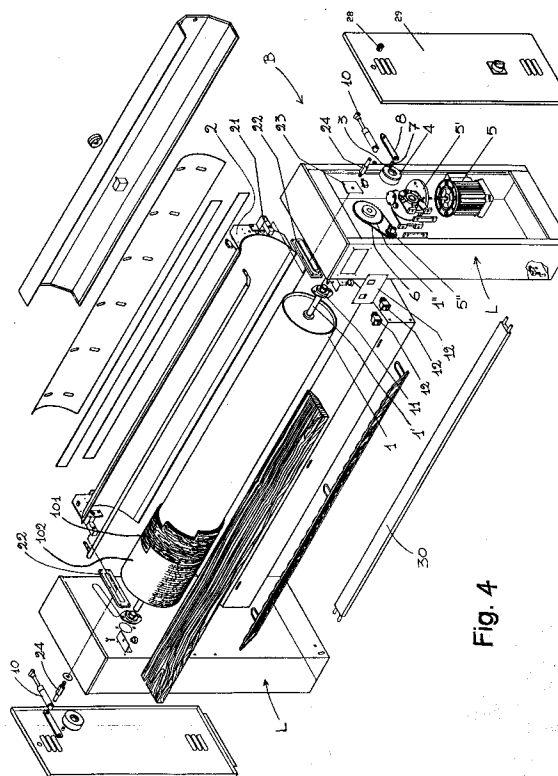
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I-33100 Udine(IT)(54) **Fabric ironing machine.**

(57) A fabric ironing machine comprising a fabric cylinder transfer means (1) and a reciprocable movable ironing cap press sliding device (2) against the cylinder transfer means (1) for ironing fabrics, said cylinder transfer means being rotated by a ratiomotor means (5) said ironing cap (2) being endowed with heating electric resistances means and eventually humidifier means; the reciprocable movable ironing cap (2) from pressing against said cylinder (1) and moving away from it, being realized by eccentric/crank-web means (7) actuating a connecting rod (8) to said ironing cap (2), characterized in that:

- said cylinder (1) is engaged in rotation in both directions by motor means (5, 6);
- said ironing cap (2) is elastically urged by elastic urging means (9, 10) against the surface of said cylinder (1);
- said eccentric/crank-web means (3) is coaxially placed in said cylinder (1) with a freewheel means (4) driven (1'') with said cylinder (1) in order that:
 - in one sense of fabric iron sliding rotation of the cylinder (1) said freewheel means (4) slides and said elastic urging means urge the ironing sliding cap against the rotating cylinder and
 - in an angular counter rotation of the cylinder (1) said freewheel means (4) does not slide obliging by the respective eccentric/crank-web means (3) to move away from the cylinder surface (1) the ironing sliding cap

(2).

**Fig. 4**

The present invention has for object a fabric ironing machine.

The invention regards fabric ironing machines comprising a fabric cylinder transfer means and a reciprocable movable ironing cap pressing device against the cylinder transfer means for ironing fabrics.

In prior art different ironing machines and particularly for industrial use to reduce the ironing work are known.

Such apparatuses are essentially composed by one or more cylinders for the translation of the fabric for ironing with associated a reciprocable movable ironing cap pressing device against the cylinder transfer means for ironing the fabric, in which said cap as a countershape endowed of heat resistance means longitudinally disposed. The ironing cap operates in press sliding ironing, namely the ironing is made obliging the fabric Eg. sheet fabric, to slide under a cap (the cap having a smooth chromed inner surface) moved by a driving cylinder that have a scratchy fabric surface (Eg. cotton fabric). The reciprocable movement in pressing the fabric against the cylinder and it moving away from the cylinder surface is realized by means of a very complex set of leverages and lifter means.

Said movement, conveniently temporized, is necessary to allow the operator for the interposition of the fabric to iron and the successive extraction of the fabric so treated, between the ironing cap and the translation cylinder.

The cap lever and lifting means are operated with their own drive motor means.

Other more recent solutions provide a cap lifting device essentially composed by a endless crew means.

IT-82522A/87 in the name of same applicant discloses an ironing cap lifting device essentially composed by an eccentric or connected crank-web to a rotational transmission means, on which is secured one stem of a respective amortizer cylinder which at its turn is secured on the support structure of the ironing cap to realize the iron-press movement on the respective cylinder.

In the first solutions disclosed above different drawbacks are noticeable, between these is firstly observable that for obtaining the placement and the lifting of the ironing cap a series of lever means of notable complexity which require a plurality of steps and furthermore involve a cumbersome structure are used.

Because the complexity of the machine, besides to a greater maintenance a long time for installation is required.

And so not convenient.

In the previous IT-82522A/87 a separate ratiomotor group is necessary for the displacement

of the crank-web in addition to the already existing one for the rotation of the translation cylinder.

The obviously drawbacks are evident: high cost for the presence of the second ratiomotor and of the relative independent transmission motion lever means; a complexity of realization even in relation to the disposition of the electric connections and of the relative commands and so analogously to the previous a consequent greater maintenance.

Scope of the present invention is to obviate the mentioned drawbacks.

This and other scopes are reached with the present invention according to the characteristics of the annexed claims solving the exposed problems by means of a fabric ironing machine comprising a fabric cylinder transfer means and a reciprocable movable ironing cap press sliding device against the cylinder transfer means for ironing fabrics, said cylinder transfer means being rotated by a ratiomotor means said ironing cap being endowed with heating electric resistances means and eventually humidifier means; the reciprocable movable ironing cap from pressing against said cylinder and moving away from it, being realized by eccentric/crank-web means actuating a connecting rod to said ironing cap, characterized in that:

- said cylinder is engaged in rotation in both directions by motor means;
- said ironing cap is elastically urged by elastic urging means (9,10) against the surface of said cylinder;
- said eccentric/crank-web means is coaxially placed in said cylinder with a freewheel means driven with said cylinder in order that:
 - in one sense of fabric iron sliding rotation of the cylinder said freewheel means slides and said elastic urging means urge the ironing sliding cap against the rotating cylinder and
 - in an angular counter rotation of the cylinder said freewheel means does not slide obliging by the respective eccentric/crank-web means to move away from the cylinder surface the ironing sliding cap.

In such a way it is possible to obtain a greater simplification of the apparatus both by the mechanical view point and electric view point, avoiding particularly the installation of a second ratiomotor group for the independent displacement of the ironing cap.

Advantageously a clutch is placed between driver means and the cylinder in order to allow the machine also to iron by pressing only without rotation of the cylinder.

These and other advantages will appear from the successive realization with the help of the accompanying drawings which particulars of execution are not to be considered limitative but exem-

plificative solely.

Figure 1 represents a lateral schematic view of the apparatus for the ironing with evidenced in first plane the displacement device of the ironing cap away the surface of the cylinder, in particular regarding the end and the starting phase (y).

Figure 2 represents a schematical view of Fig.1 in ironing phase (x) in which the ironing cap is pressed against the cylinder surface.

Figure 3 represents a schematic view in longitudinal section, of the ensemble: cylinder and transmission means to the ironing cap.

Figure 4 represents a partial explosion view of the ironing machine.

Said Figures disclose an apparatus (A) and fabric ironing machine comprising:

- a fabric cylinder transfer means (1) and
- a reciprocable movable ironing cap press sliding device (2) against the cylinder transfer means (1) for ironing fabrics,
- said cylinder transfer means being rotated by a ratiomotor means (5) said ironing cap (2) being endowed with heating electric resistances means and eventually humidifier means;

The reciprocable movable ironing cap (2) from pressing against said cylinder (1) and moving away from it, being realized by eccentric/crank-web means (7) actuating a connecting rod (8) to said ironing cap (2).

The novel feature of the apparatus and the machine comprises the following characteristics:

- said cylinder (1) is engaged in rotation in both directions by motor means (5, 6);
- said ironing cap (2) is elastically urged by elastic urging means (9, 10) against the surface of said cylinder (1);
- said eccentric/crank-web means (3) is coaxially placed in said cylinder (1) with a free-wheel means (4) driven (1'') with said cylinder (1) in order that:
 - in one sense of fabric iron sliding rotation of the cylinder (1) said freewheel means (4) slides and said elastic urging means urge the ironing sliding cap against the rotating cylinder and
 - in an angular counter rotation of the cylinder (1) said freewheel means (4) does not slide obliging by the respective eccentric/crank-web means (3) to move away from the cylinder surface (1) the ironing sliding cap (2).

More in particular the cylinder (1) conveniently supported laterally by a side loom L, and comprising in it a displacement device (B) of the ironing cap (2) essentially composed by a free wheel toothed (4) keyed on the longitudinal axis (1') of rotation of the cylinder (1) by an intermediating

cylinder toothed wheel (1'') driven in rotation by a belt (6) driven by a reversible electric motor (5) with the intermediating reducer means (5') and pinion means (5'').

5 Said free wheel (4) mounted on said cylinder toothed wheel (1'') has an eccentric pinion (3) to realize said crank-web to allow by intermediating cap connecting rod (7) to move away the respective cap from the cylinder, in counter-rotation sense of the cylinder (1) after rotation in advancement of the textile namely the ironing accomplished.

10 During ironing the gas-spring means amortizer cylinder means (10-9) urge the ironing cap on the cylinder (1) to allow sliding of the textile driven by the cylinder.

15 For this scope the cylinder surface is covered with compressible material (101) end this layer is covered with cotton textile (102).

20 Both the end of the cap connecting rod (8) and the amortizer gas cylinder (10-9) are keyed to a shaft (24) that by intermediating guide means (23, 22) allows displacement of the respective cap (2) by the connecting sliding guide nib (21).

25 To disengage the transmission on the cylinder (1) a clutch is provided (11) to allow transformation of the machine from sliding-ironing operation (ironing with sliding of the textile during rotation of the cylinder) to press-ironing operation (ironing with no rotation of the cylinder and no advancement in pressing of the textile or cloth or fabric or product to be ironed).

30 In sliding-ironing operation in rest phase the ironing cap is lifted as disclosed in figures 1, 4 because the crank-web (3) of the freewheel (4) supports contrast the urging force of the amortizer 10;

35 - after placed the textile or fabric on the cylinder (1) under the cap (2), with the foot command (30) the motor (5) is advanced obliging the cylinder (1) to rotate, in starting rotation the freewheel (4) in its rotation in a first angular rotation portion liberates the resistance to close the cap (2) against the cylinder (1) and the amortizer gas-cylinder 10 press the cap (2) on the cylinder surface and starts advancement of the fabric in ironing.

40 Be noted that after the first angular rotation the crank-web does not rotate anymore in the sense of the cylinder because the presence of the freewheel (4), so the ironing cap (2) remains pressed against the cylinder surface (102) by the respective gas-amortizer (10).

45 - after termination of ironing advancement the driving motor (5) is obliged to counter-rotate for a certain angular amount obliging the respective crank-web to counter-rotate with the cylinder because of the freewheel (4), urging against the gas cylinder (10) and moving far away the respective cap (2);

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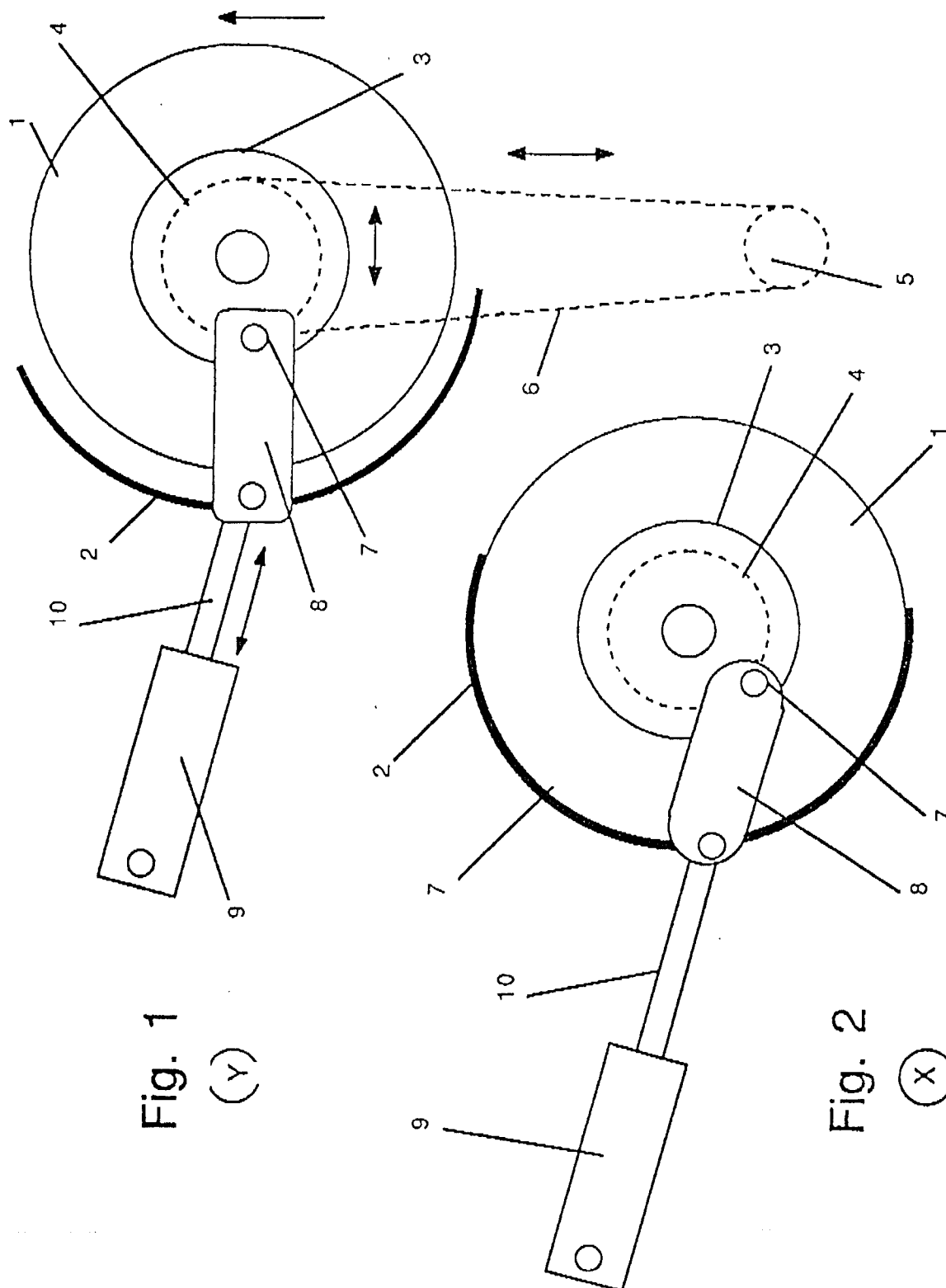
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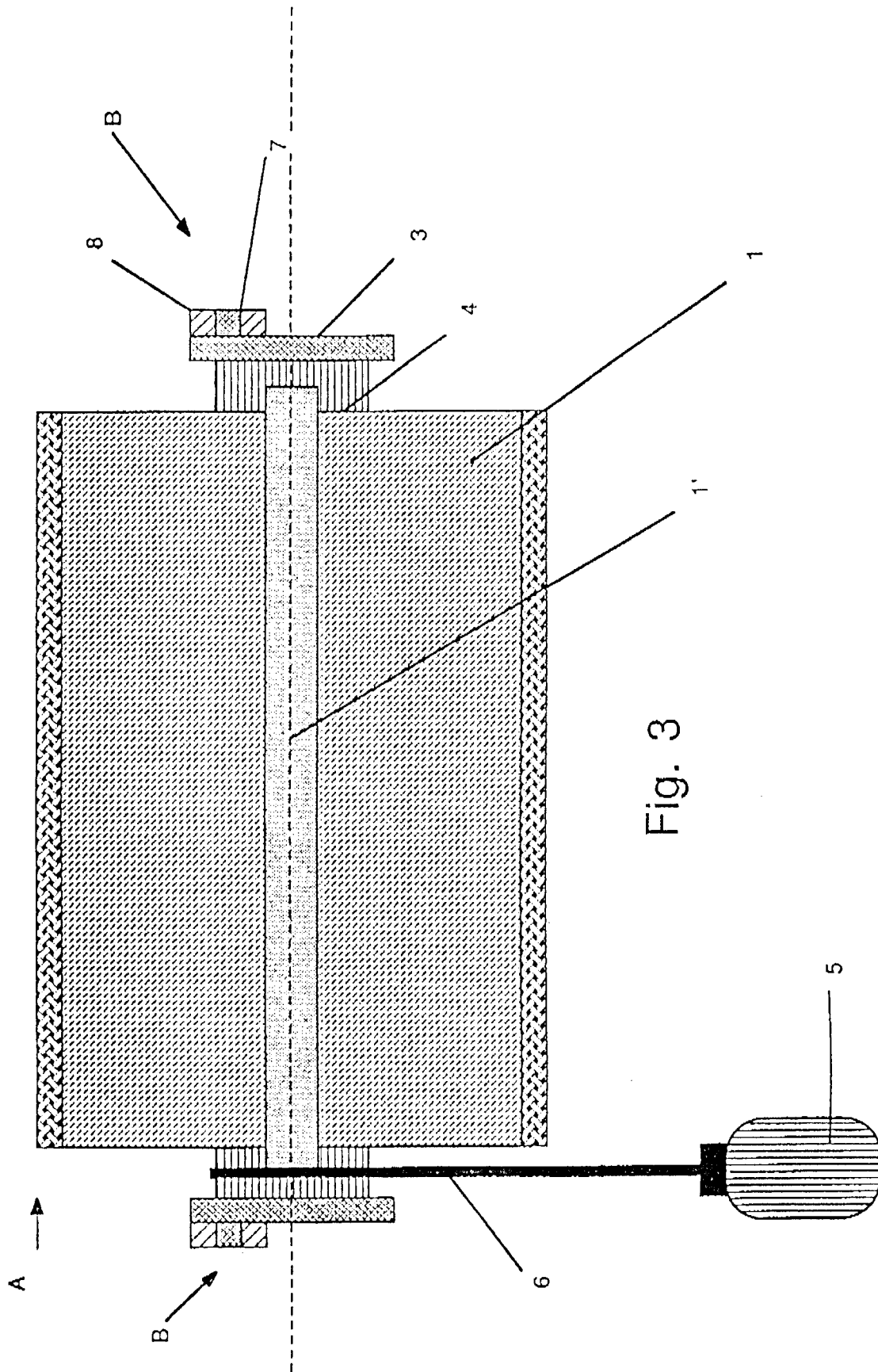
- in this condition the ironed fabric is extracted from the machine and restarting ironing for a further fabric can be made.

If the clutch (11) disengages the drive cylinder we can obtain the ironing pressing operation namely ironing step by step without rotation of the cylinder (1). 5

Claims

1. A fabric ironing machine comprising a fabric cylinder transfer means (1) and a reciprocable movable ironing cap press sliding device (2) against the cylinder transfer means (1) for ironing fabrics, said cylinder transfer means being rotated by a ratiomotor means (5) said ironing cap (2) being endowed with heating electric resistances means and eventually humidifier means; the reciprocable movable ironing cap (2) from pressing against said cylinder (1) and moving away from it, being realized by eccentric/crank-web means (7) actuating a connecting rod (8) to said ironing cap (2), characterized in that: 10
 - said cylinder (1) is engaged in rotation in both directions by motor means (5, 6); 15
 - said ironing cap (2) is elastically urged by elastic urging means (9, 10) against the surface of said cylinder (1); 20
 - said eccentric/crank-web means (3) is coaxially placed in said cylinder (1) with a freewheel means (4) driven (1'') with said cylinder (1) in order that: 25
 - in one sense of fabric iron sliding rotation of the cylinder (1) said freewheel means (4) slides and said elastic urging means urge the ironing sliding cap against the rotating cylinder and 35
 - in an angular counter rotation of the cylinder (1) said freewheel means (4) does not slide obliging by the respective eccentric/crank-web means (3) to move away from the cylinder surface (1) the ironing sliding cap (2). 40
2. A fabric ironing machine as claimed in claim 1 characterized in that said eccentric/crank-web means (3) with respective and cap connecting rod (8) is installed on both sides of the respective cylinder (1) being rigidly connected by a coaxial shaft (1'). 45
3. A fabric ironing machine as claimed in claim 1 characterized in that said cylinder can be disengaged in rotation by clutch means (11) to allow transformation of iron sliding operation into press iron operation. 55





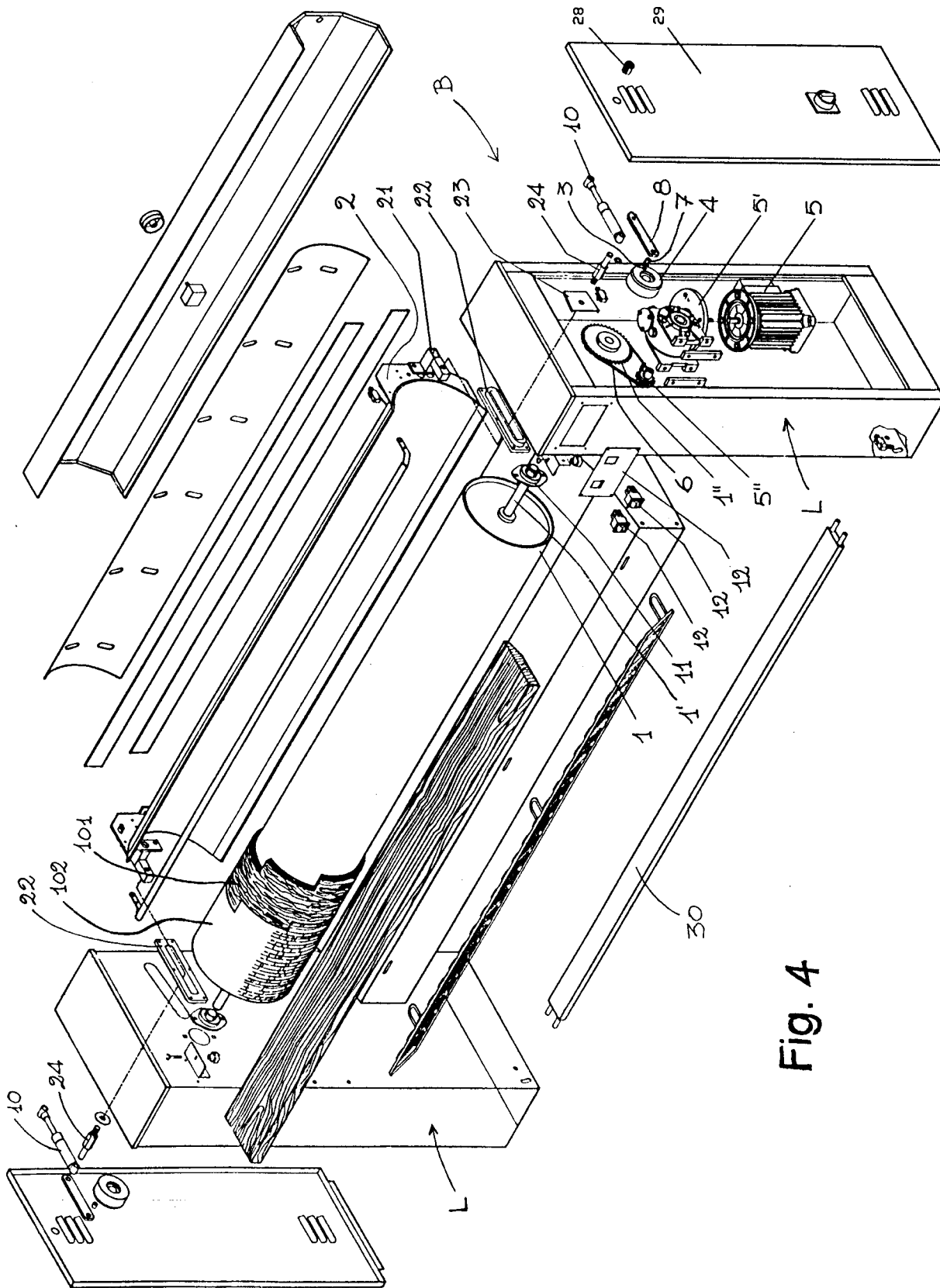


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number

EP 90 11 9284

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,A	GB-A-1 048 290 (SIEMENS-ELECTROGERÄTE A.G.) * the whole document * - - -	1,3,2	D 06 F 65/06
X,A	US-A-2 683 319 (S.F. BICKEL ET AL) * the whole document * - - - - -	1,3,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			D 06 F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 05 June 91	Examiner COURRIER,G.L.A.
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