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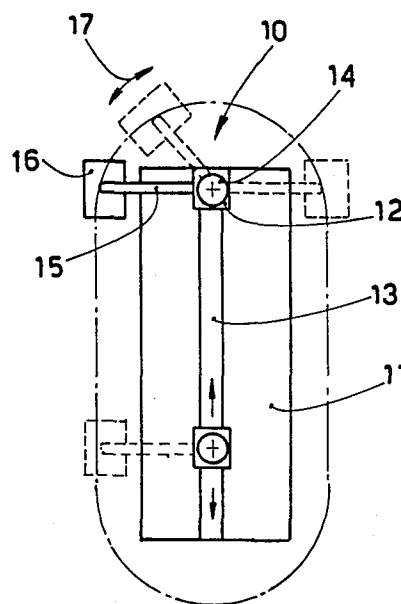
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54 **Device to move a carriage for doffing yarn packages and piecing up yarn on two faces of a textile machine.**

57 This invention concerns a device (10) to move a carriage (16) for doffing yarn packages and piecing up yarn on two faces of a textile machine (11) which processes yarn, such as open-end spinning machines, winding machines, twisting machines, etc., the carriage (16) being supported at one end on arm means (15) by a trolley (12) able to move on guides (13) along the machine (11) to which the device (10) is fitted, in which device (10):

- the guides (13) are sole guides and are placed on the centre line of the machine (11) above the latter (11),
- and the movable trolley (12) comprises at least stop means (37), means (20) to actuate rotation of the arm means (15) and catch means (40) to clamp the arm means (15).

The invention also concerns a textile machine (11) which processes yarn, such as open-end spinning machines, winding machines, twisting machines, etc., and which employs a device (10) to move a carriage (16) for doffing yarn packages and piecing up yarn on two faces of such machine (11) according to the foregoing.



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1 "DEVICE TO MOVE A CARRIAGE FOR DOFFING YARN PACKAGES AND
2 PIECING UP YARN ON TWO FACES OF A TEXTILE MACHINE"

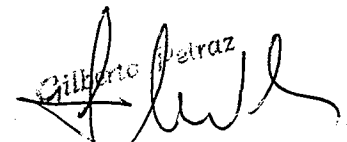
3 This invention concerns a device to move a carriage for
4 doffing yarn packages and piecing up yarn on two faces of a
5 textile machine and, in particular, of a machine for process-
6 ing yarn, such as a twisting machine, winding machine or a
7 normal or open-end spinning machine.

8 To be more exact, the invention concerns a device able to
9 control the movement of a carriage for doffing yarn packages
10 and piecing up yarn so that the carriage can pass from one
11 face to the other face of an open-end spinning machine or
12 other machine for processing yarn, and also able to control
13 the movement of such carriage along such faces.

14 The invention also concerns a textile machine to process
15 yarn, such as an open-end spinning machine, ring spinning
16 machine, winding machine, twisting machine, etc. which employs
17 a device to move the carriage for doffing yarn packages and
18 piecing up yarn in accordance with the invention.

19 We shall refer hereinafter specifically to an open-end
20 spinning machine as being a preferred but not restrictive
21 application, but it is understood that the invention can be
22 applied to twisting machines, winding machines, ring spinning
23 machines, etc.

24 Embodiments are known which are intended to serve both

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1 faces of an open-end spinning machine by means of one single
2 carriage for doffing yarn packages and piecing up yarn.

3 For this purpose guides or rails are provided which are
4 shaped substantially like a U or even surround the spinning
5 machine wholly and are able to permit the carriage doffing
6 yarn packages to run along each face of the spinning machine.

7 Moreover, such guides enable the carriage to rotate about
8 the ends of the machine, or about one end of the machine when
9 the guides are U-shaped, so as to enable both faces of the
10 machine and their relative spinning units to be serviced by
11 one single carriage.

12 Such embodiments entail many drawbacks. One drawback lies
13 in the fact that the rails or guides for the running of the
14 carriage are located in the upper part of the machine to which
15 the carriage is fitted and in the lower part of the machine at
16 the height of the spinning units.

17 This involves difficulty in being able to have access to
18 the machine, for instance, so as to change the slivers or for
19 an inspection or cleaning or examination or maintenance.

20 Furthermore, such known embodiments entail an excessive
21 bulk of the immovable parts such as the rails or guides and
22 the relative uprights or supports; such a bulk may exist not
23 only crosswise to the machine to which the carriage is fitted,
24 but also lengthwise in correspondence with the ends where the
25 guides or rails follow a substantially semi-circular path.

26 Besides, the presence of guides at the ends of the machine
27 makes it hard, or may make it hard, to have access to the cont-
28 rols, which are usually to be found precisely at the ends of
29 the machine.

30 Embodiments in the name of the present applicant are known
31 which disclose the employment of lengthwise guides placed
32 above the machine, the carriage being supported at one end on
33 an arm able to run on such guides by means of an appropriate

1 central plate 112 of the trolley 12 which comprises two re-
2 entrant portions 212 for the arrival of the feed pipes 26
3 bringing the feed of aspiration air to the carriage 16.

4 Side frame members 31 of the frame of the trolley 12 can be
5 seen in the figure, as well as terminal axles 32-132, of which
6 the axle 132 contains a shaft 33 which supplies motion from
7 the reduction gear 119 to the wheels 18.

8 In this instance two bars 34 having a tubular shape and
9 superimposed, one on another, are solidly fixed to the frame
10 of the trolley 12 and bear at their centre portion a collar
11 134 integrally fixed to them.

12 A bar 35 having collars 135 at its ends can slide by means
13 of such collars 135 on the cylindrical bars 34 and is kept in
14 position by spring means 36.

15 The bar 35 supports sets of stop means 37 having the form
16 of catches 137 in this case. These catches 137 are normally
17 kept in their extended position 137A by torsion spring means
18 but can be retracted to position 137B through the action of
19 actuation means 337. In this example the means 337 consist of
20 pneumatic or hydraulic pistons connected to the carriage 16,
21 but the invention visualises that the means 337 can be embodi-
22 ed in any required manner, namely as mechanical or electrical
23 means, etc.

24 The catches 137 engage stationary abutments 39 located on
25 the spinning machine 11 along the rails 113 and visible in
26 Fig.3a as well.

27 The particular form and positioning of the catches 137 have
28 the effect that, when the catches 137 arrive in correspondence
29 with the positioner abutments 39, they can move until they
30 contain the positioner abutment 39 between them.

31 When the first catch 137 has passed beyond the positioner
32 abutment 39 during movement of the trolley 12, the catch 137
33 is tripped to position 137A by the action of the spring 38 so

1 that both the catches 137 are at the sides of the abutment 39,
2 and the abutment 39 acts against the catch at 137A which is
3 further behind in relation to the direction of movement of the
4 trolley 12.

5 The trolley 12 is halted in this way against the positioner
6 abutment 39 and is withheld by the catches 137.

7 Springs 36 which cushion the halting of the trolley 12 are
8 included so as to obtain a gentle stopping action, for the
9 trolley 12 itself together with the collar 134 solidly fixed
10 to the bars 34 compresses the springs 36, which firstly absorb
11 the energy of motion of the trolley 12 and then bring it back
12 to the position determined by the positioner abutment 39.

13 When the trolley 12 has to be moved to take the carriage 16
14 so as to correspond with the spinning unit 23 to be serviced,
15 the pneumatic pistons 337 are actuated and cause retraction of
16 the catches 137 to position 137B.

17 The catches 137 in this position 137B press no longer
18 against the positioner abutment 39 and it is therefore pos-
19 sible for the trolley 12 to run lengthwise along the rails
20 113.

21 Like abutment means 45 with catches 237 and abutments 139
22 serve to halt rotation of the arm 15 in relation to the
23 trolley 12, as is shown in Figs.4a and 4b.

24 In this case catches 237 positioned vertically are present,
25 and in the example shown there is only one pair of catches
26 237.

27 Positioner abutments 139 are comprised on both sides of the
28 trolley 12 and engage the catches 237 in a manner fully
29 analogous to that shown in Figs.3a and 3b.

30 Moreover, so as to ensure an accurate alignment and rigid
31 connection of the carriage 16 in relation to the trolley 12, a
32 catch means 40 is included which consists of a rod with a
33 tapered end 140 able to cooperate with a seating 240. The rod

1 Each spinning unit 23 corresponds with a work position of
2 the carriage 16. Fig.2 shows one of the spinning units 23 with
3 a yarn package in the process of formation, the carriage 16
4 being positioned before the spinning unit 23.

5 Fig.3a shows in greater detail the device 10 that rotates
6 the carriage 16. The arm 15 which rotates the carriage 16 can
7 be seen high up, and to the arm 15 is connected by means of
8 the plate 14 (see Figs.4) a rotation pivot 25 driven by a
9 rotary piston 20.

10 Two feed pipes 26 are solidly fixed to the rotation arm 15
11 of the carriage 16 and are alternatively connected to a sleeve
12 126 and blind sleeve 226 respectively, depending on the posit-
13 ion of the arm 15 on one or the other face of the spinning
14 machine 11.

15 A seal is obtained with resilient collars 46. Likewise,
16 another resilient collar 46 placed at the lower end of the
17 sleeve 126 ensures an airtight seal for outlet holes 128 of a
18 duct 28 which aspirates air.

19 Each of the holes 128 is positioned in correspondence with
20 a spinning unit 23 and is closed with a rotatable cover 27
21 (see Fig.3c).

22 On arrival of the trolley 12 at the spinning unit 23 to be
23 serviced, the feed pipe 26 displaces the cover 27 from posit-
24 ion 27A (or 27C, depending on the direction of movement of the
25 trolley 12) to position 27B in which the corresponding hole
26 128 is uncovered.

27 The collar 46 ensures an airtight seal between the hole 128
28 and sleeve 126. In this way one of the two feed pipes 26 is
29 always in communication with the duct 28 through the sleeve
30 126, whereas the other feed pipe 26 is engaged with the blind
31 sleeve 226 and is therefore cut out. Both the feed pipes 26
32 form an end of one single aspiration duct 47.

33 When the trolley 12 moves away, the cover 27 is thus taken

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1 to 27C (or 27A, depending on the direction of movement), as is
2 shown in Fig.3c.

3 Moreover, two small channels 29 and 129 can be seen below
4 the movable trolley 12 and serve to guide in a known manner a
5 chain 30 which supports a hose for the pneumatic feed of com-
6 pressed air and a cable for the electricity supply, so as to
7 actuate the various functions of the carriage 16.

8 Such chain 30 takes the feed and supply at the centre of
9 the machine and can run respectively within the small channel
10 29 and small channel 129; each of the two small channels 29-
11 129 occupies half of the length of the machine 11 to which the
12 invention is fitted.

13 The small channels 29-129 are staggered in height or have
14 guides staggered in height so as to enable the chain 30 to run
15 on the two corresponding surfaces.

16 In fact, starting from the centre and assuming the trolley
17 12 to be in a generic position along the machine 11, the chain
18 30 travels along a tract in the lower channel 29 and then
19 withdraws and is supported lastly in the upper channel 129.

20 When the trolley 12 moves, the chain 30 is unwound along
21 the lower channel 29 to a limit position where it is lying
22 completely in the lower channel 29, and to another limit po-
23 sition where it is lying completely in the upper channel 129.

24 Fig.3b shows the device 10 of Fig.3a from below with a
25 partial view. The rail 113 is evident on which the wheels 18,
26 not visible in Fig.3a, run.

27 Opposed rollers 118, which roll against the lower side of
28 the rails 113, prevent the movable trolley 12 from being lift-
29 ed from the rails 113.

30 Rollers or wheels 218 are also included which run horizont-
31 ally on the inner side of the rail 113 and thus ensure the
32 stability and horizontal alignment of the movable trolley 12.

33 In the view from below in Fig.3b it is possible to see a

1 In the example of Fig.1 the arm 15 is shown diagrammatical-
2 ly as being single but the invention also envisages advantage-
3 ously an arm 15 embodied with multiple elements such as tubul-
4 ar elements, or channel sections, or other elements of an
5 equivalent type (see Figs.4) so as to obtain the required
6 rigidity.

7 A doffing carriage 16 is supported at one of its ends in a
8 rigid manner by the end of the arm 15.

9 As can be seen in Fig.1, the doffing carriage 16 can be
10 rotated as shown by an arrow 17 when the trolley 12 reaches
11 one or the other end of the spinning machine 11.

12 The carriage 16 can be brought in this way so as to corres-
13 pond with one or the other face of the spinning machine 11, as
14 required.

15 Fig.1 shows with lines of dashes the trajectory followed by
16 the carriage 16 about the spinning machine 11.

17 In Fig.2 the runway 13 on which the movable trolley 12 runs
18 consists, in this instance, of two rails 113, one per face of
19 the machine and positioned substantially in correspondence
20 with the top 111 of the spinning machine 11.

21 The trolley 12 has wheels 18, which are four in number in
22 this case. Such wheels 18 are driven by a motor 19, which is
23 shown in Fig.3b, through an appropriate reduction gear 119.

24 The drive may be obtained on one axle, as in the example
25 shown, or on more than one axle, according to requirements.

26 Fig.2 shows also, in the lower part of the movable trolley
27 12, a rotary piston 20, which has the function of actuating
28 the rotation of the arm 15 and therefore of the carriage 16
29 connected to the arm 15.

30 Along both faces of the spinning machine 11 are provided
31 devices 21 to convey tubes, the devices 21 having the task of
32 feeding tubes 22 to spinning units 23 located on each face of
33 the spinning machine 11.

1 We shall describe now a preferred embodiment of the
2 invention as a non-restrictive example with the help of the
3 attached figures, in which: -

4 Fig.1 gives a plan diagram of an open-end spinning machine
5 with a carriage provided with a rotation device accor-
6 ding to the invention;

7 Fig.2 gives a view of the rotation device together with the
8 arm and the carriage;

9 Figs.3a and 3b show details of the stop means and means to
10 cushion the halt of the movable trolley;

11 Fig.3c shows a detail of the intakes which aspirate air and
12 of the relative closure means;

13 Figs.4 lastly show the means to clamp and stop the arm in
14 relation to the movable trolley.

15 In Fig.1 a device of the invention is indicated with 10 and
16 in this instance is fitted to a spinning machine of an open-
17 end type referenced with 11. Such an application should not be
18 deemed restrictive as the invention can be fitted also to
19 other types of machines, as was made clear earlier.

20 In this case the device consists of a slidable trolley 12
21 which can move lengthwise along the spinning machine 11 by
22 means of a runway 13 located on the centre line of the spin-
23 ning machine 11.

24 Such runway 13 can have one or more rails of any required
25 shape, the trolley 12 being equipped with suitable means 18
26 able to roll, such as wheels, rollers or other equivalent
27 means.

28 It is also possible to obtain the movement of the trolley
29 12 by means of toothed wheels cooperating with one or more
30 racks positioned lengthwise along the runway 13.

31 A rotatable plate 14 is located on top of the trolley 12
32 and is connected rigidly to an arm indicated diagrammatically
33 with 15.

1 only in the immediate neighbourhood of the ends of the machine
2 to which the carriage is fitted.

3 In this way, during the ordinary working of the carriage
4 along one or the other of the faces of the machine, the carri-
5 age itself remains solidly and rigidly connected by the arm
6 which supports it, to the trolley able to move along the top
7 guide.

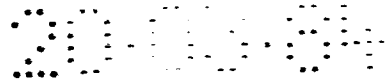
8 Only when the carriage reaches one of the end positions of
9 the machine is the arm supporting the carriage able to rotate
10 in relation to the movable trolley.

11 The invention envisages also damper means intended to make
12 the carriage halt gently both in correspondence with each
13 spinning unit and also after its rotation so as to obviate
14 heavy vibrations and stresses on the carriage and on the mov-
15 able trolley and the relative rails or guides.

16 The invention is therefore embodied with a device to move a
17 carriage for doffing yarn packages and piecing up yarn on two
18 faces of a textile machine which processes yarn, such as open-
19 end spinning machines, winding machines, twisting machines,
20 etc., the carriage being supported at one end on arm means by
21 a trolley able to move on guides along the machine to which
22 the device is fitted, the device being characterized by the
23 facts that:

24 - the guides are sole guides and are placed on the centre line
25 of the machine and above the latter,
26 - and that the movable trolley comprises at least stop means,
27 means to actuate rotation of the arm and catch means to
28 clamp the arm means.

29 Moreover, the invention is obtained with a textile machine
30 to process yarn, such as open-end spinning machines, ring
31 spinning machines, winding machines, twisting machines, etc.,
32 the textile machine being characterized by the fact that it
33 employs a device as described above.



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1 trolley.

2 Although this embodiment is satisfactory from the bulk
3 point of view since it requires neither lower guides nor
4 guides surrounding the machine, yet it needs a carriage for
5 each face of the machine.

6 It is a purpose of this invention to eliminate the above
7 drawbacks by providing a device to rotate the arm on which the
8 doffing carriage is supported at one end.

9 Such arm is rotatably connected to a trolley able to move
10 along one single lengthwise guide or rail positioned at the
11 top and on the centre line of the machine to which the carri-
12 age is fitted.

13 According to the invention one single guide or rail arran-
14 ged at the top and on the centre line of the machine is enough
15 in this way, instead of a rail or set of rails located about
16 the periphery of the machine or instead of a guide for each
17 carriage, for one single carriage will service both faces of
18 the spinning machine.

19 Moreover, the fact that rails or guides surrounding the
20 machine are not envisaged makes it possible to adopt an over-
21 all length of rail or guide equal to less than half, or sub-
22 stantially equal to half, of the length required by the known
23 art.

24 The invention envisages the use of simple stop means inten-
25 ded to determine the position of the halting of the carriage
26 precisely in correspondence with each spinning unit.

27 Such stop means are necessary because, for the operation of
28 doffing a yarn package and piecing up the yarn, it is necess-
29 ary for the traveller carriage to stop at a well determined
30 position in front of the spinning unit to be serviced.

31 Furthermore, the invention envisages means to clamp the
32 rotation of the arm to which the carriage is solidly fixed;
33 such clamp means can be disactivated to permit such rotation

1 40 is guided in a guide 340, which is tubular in this instance
2 and solidly fixed to a support 42.

3 The seating 240 is made, in this instance, in the abutment
4 139 but could also be made separately, according to the inven-
5 tion, in another part rigidly connected to the trolley 12.

6 The catch 40 is actuated here by a jack 41 but could have
7 actuation means of another type, mechanical or electrical, for
8 example.

9 The jack 41 in its turn is connected by brackets 141 to a
10 support element 42, which in turn supports the tubular bars
11 234.

12 An element 43 that supports the catches 237 with relative
13 release pistons, which are not shown here but are of the same
14 type as the pistons 337 of Fig.3b, can run on the bars 234 so
15 as to obtain a damping effect.

16 When the carriage 16 is required to move from one face to
17 the other of the spinning machine 11, it is brought into cor-
18 respondence with one end of the spinning machine 11 by the
19 trolley 12 running along the runway 13.

20 When the trolley 12 reaches the end of the spinning machine
21 11, it stops in correspondance with a station for the start of
22 rotation owing to the action of catches 137, this station be-
23 ing located beyond the last spinning unit.

24 The catch means 40 and catches 237 are then released and
25 the hydraulic piston 20 is actuated.

26 ~~The arm 15 which bears the carriage 16 carries out half of~~
27 a revolution and is halted on the opposite face of the spin-
28 ning machine 11 by catches that engage the positioner abutment
29 139.

30 The end of rotation is cushioned by the springs 136.
31 The catch means 40 is actuated again by the jack 41 and cre-
32 ates a rigid and accurately aligned connection of the arm 15
33 to the trolley 12.

1 The trolley 12 moves and brings the carriage 16 in front of
2 the spinning unit 23 to be serviced.

3 The pistons 337 remain actuated, with the catches at 137B,
4 until the trolley 12 reaches the neighbourhood of the abutment
5 39 corresponding with the spinning unit 23 to be serviced.

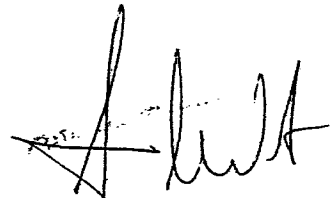
6 Means to sense the position of the carriage 16 and of the
7 spinning unit 23 to be serviced can be envisaged for this pur-
8 pose, the movement of the trolley 12 being controlled by a
9 logical unit for corrective action.

10 This can be obtained, for instance, by means of an electro-
11 nic unit to control the actuation of the device 10.

12 In the embodiment shown the arm 15 consists of two steel
13 sections 115 solidly attached to the plate 14 and bearing the
14 carriage 16 at one end.

15 The carriage 16 in this example is suspended on the sect-
16 ions 115 by means of bolted brackets 116.

17 In this case an adjustment screw 44 enables the exact pos-
18 ition of the carriage 16 to be regulated at the time it is
19 fitted after the bolts connecting the brackets 116 to the car-
20 riage 16 have been slackened off.

A handwritten signature in black ink, consisting of a stylized 'A' followed by a series of loops and a final vertical stroke.

INDEX

1		
2	10	- rotation device
3	11	- spinning machine
4	111	- top of spinning machine
5	12	- movable trolley
6	112	- central plate of trolley
7	212	- re-entrant portions
8	13	- runway
9	113	- rails
10	14	- rotatable plate
11	15	- arm
12	115	- steel sections
13	16	- doffing carriage
14	116	- brackets
15	17	- rotation of carriage
16	18	- wheel means
17	118	- wheel means
18	218	- rollers or wheels
19	19	- motor to drive movable trolley
20	119	- reduction gear
21	20	- rotary piston
22	21	- device to convey tubes
23	22	- tubes
24	23	- spinning unit or work position
25	24	- yarn package
26	25	- pivot
27	26	- feed pipes
28	126	- sleeve
29	226	- blind sleeve
30	27	- rotatable cover
31	28	- duct to aspirate air
32	128	- outlet holes
33	29	- small channel to lodge chain

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- 1 129 - small channel to lodge chain
- 2 30 - chain
- 3 31 - side frame members
- 4 32 - axle
- 5 132 - axle
- 6 33 - shaft
- 7 34 - bar
- 8 134 - collar
- 9 234 - bars
- 10 35 - catch-bearing bar
- 11 135 - slidable collars
- 12 36 - springs
- 13 136 - springs
- 14 37 - stop means
- 15 137 - positioner catches
- 16 137A - extended position
- 17 137B - retracted position
- 18 237 - positioner catches
- 19 337 - actuation means or pistons
- 20 38 - torsion springs
- 21 39 - positioner abutments
- 22 139 - positioner abutments
- 23 40 - catch means
- 24 140 - tapered end
- 25 240 - seating
- 26 340 - guide
- 27 41 - jack
- 28 141 - brackets
- 29 42 - support
- 30 43 - support for catches
- 31 44 - adjustment screw for carriage
- 32 45 - abutment means
- 33 46 - resilient collars

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1 47 - aspiration duct.

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CLAIMS

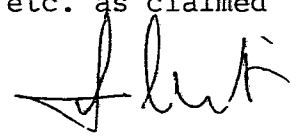
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2 1 - Device (10) to move a carriage (16) for doffing yarn
3 packages and piecing up yarn on two faces of a textile machine
4 (11) which processes yarn, such as open-end spinning machines,
5 winding machines, twisting machines, etc., the carriage (16)
6 being supported at one end on arm means (15) by a trolley (12)
7 able to move on guides (13) along the machine (11) to which
8 the device (10) is fitted, the device (10) being characterized
9 by the facts that:

- 10 - the guides (13) are sole guides and are placed on the centre
11 line of the machine (11) and above the latter (11),
12 - and that the movable trolley (12) comprises at least stop
13 means (37), means (20) to actuate rotation of the arm means
14 (15) and catch means (40) to clamp the arm means (15).

15 2 - Device (10) to move and rotate a carriage (16) for doffing
16 yarn packages and piecing up yarn on two faces of a textile
17 machine (11) which processes yarn, such as open-end spinning
18 machines, winding machines, twisting machines, etc. as claimed
19 in Claim 1, in which the means (37) to stop the trolley (12)
20 comprise at least pairs of catches (137) solidly fixed to the
21 trolley (12), the catches (137) of each pair being returned
22 resiliently (38) and arranged as counterparts of each other
23 and yielding, in opposite directions, to stationary abutment
24 means (39), so that the first catch (137) of each pair appro-
25 aching the abutment (39) yields (137B) to the abutment (39)
26 and returns (137A) as soon as it has passed beyond the abut-
27 ment (39), whereas the other catch (137) of each pair collides
28 with the abutment (39) and, not being able to yield, thus
29 stops the movement of the trolley (12).

30 3 - Device (10) to move and rotate a carriage (16) for doffing
31 yarn packages and piecing up yarn on two faces of a textile
32 machine (11) which processes yarn, such as open-end spinning
33 machines, winding machines, twisting machines, etc. as claimed



1 in Claim 1 or 2, which comprises abutment means (45) to stop
2 rotation of the arm (15).

3 4 - Device (10) to move and rotate a carriage (16) for doffing
4 yarn packages and piecing up yarn on two faces of a textile
5 machine (11) which processes yarn, such as open-end spinning
6 machines, winding machines, twisting machines, etc. as claimed
7 in Claims 1 and 3, in which the abutment means (45) to stop
8 rotation of the arm (15) comprise at least one pair of catches
9 (237) solidly fixed to the arm (15), such catches (237) being
10 returned (38) resiliently and arranged as counterparts of each
11 other and yielding, in opposite directions, to abutment means
12 (139), one of such abutment means (139) being solidly fixed to
13 each side of the trolley (12), so that the first catch (237)
14 of this pair of catches (237) approaching the abutment (139)
15 yields (137B) to the abutment (139) and returns (137A) as soon
16 as it has passed beyond the abutment (139), whereas the other
17 catch (237) of the pair of catches (237) collides with the
18 abutment (139) and, not being able to yield, thus stops the
19 movement of the arm (15).

20 5 - Device (10) to move and rotate a carriage (16) for doffing
21 yarn packages and piecing up yarn on two faces of a textile
22 machine (11) which processes yarn, such as open-end spinning
23 machines, winding machines, twisting machines, etc. as claimed
24 in any claims hereinbefore, which comprises actuation means
25 (337) that keep the catches (137-237) at least momentarily in
26 a retracted position (137B) so as not to contact the abutment
27 means (39-139).

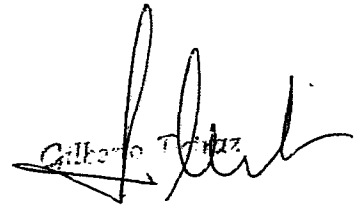
28 6 - Device (10) to move and rotate a carriage (16) for doffing
29 yarn packages and piecing up yarn on two faces of a textile
30 machine (11) which processes yarn, such as open-end spinning
31 machines, winding machines, twisting machines, etc. as claimed
32 in Claims 1 and 5, in which the actuation means (337) are
33 piston means.



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1 7 - Device (10) to move and rotate a carriage (16) for doffing
2 yarn packages and piecing up yarn on two faces of a textile
3 machine (11) which processes yarn, such as open-end spinning
4 machines, winding machines, twsting machines, etc. as claimed
5 in any claim hereinbefore, which comprises at least resilient
6 means (36-136) to cushion the end of travel.
7 8 - Textile machine (11) which processes yarn, such as open-
8 end spinning machines, winding machines, twisting machines,
9 etc. and which employs a device (10) to move a carriage (16)
10 for doffing yarn packages and piecing up yarn on two faces of
11 such machine (11) according to any claim hereinbefore.


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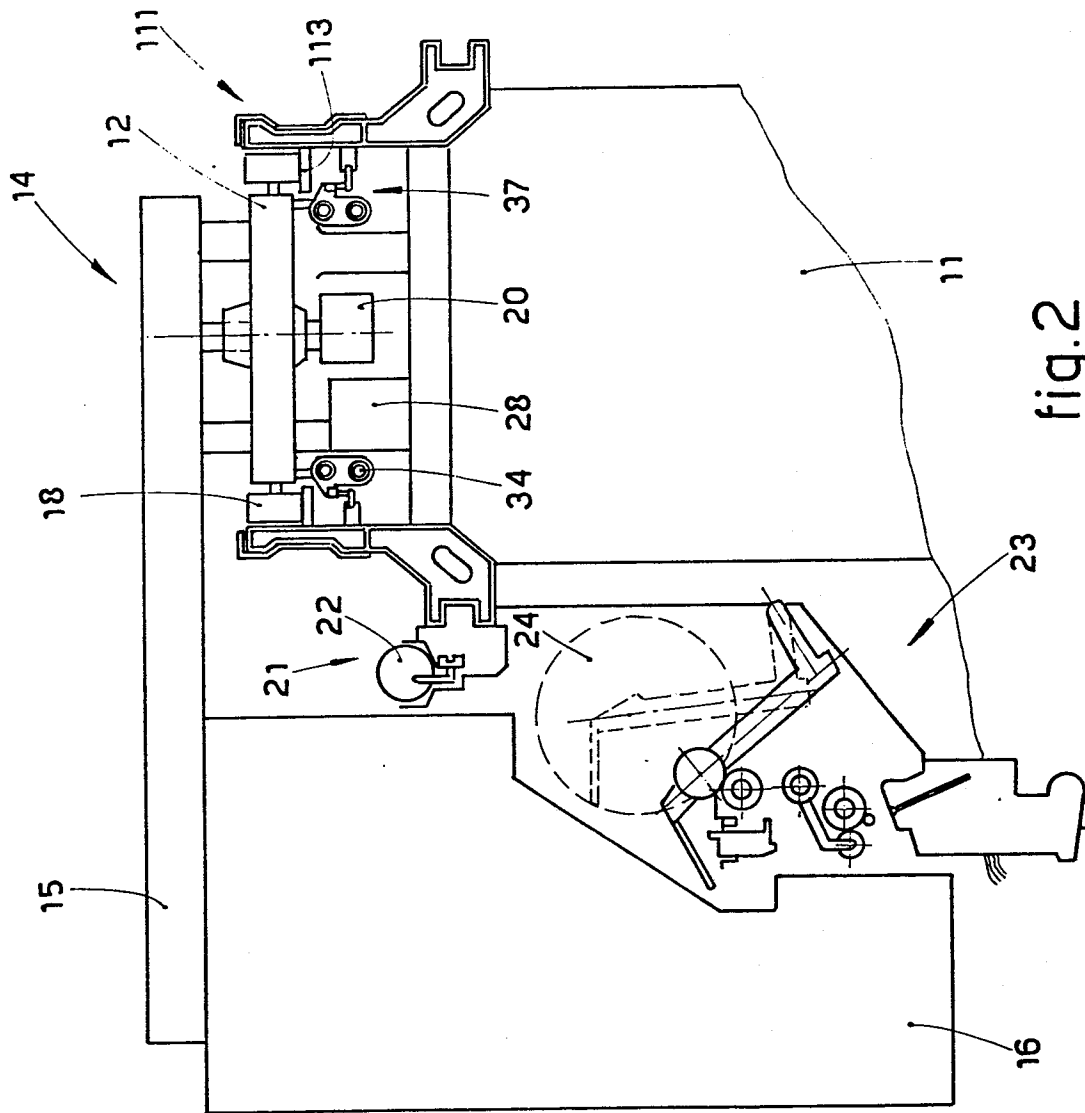


fig.2

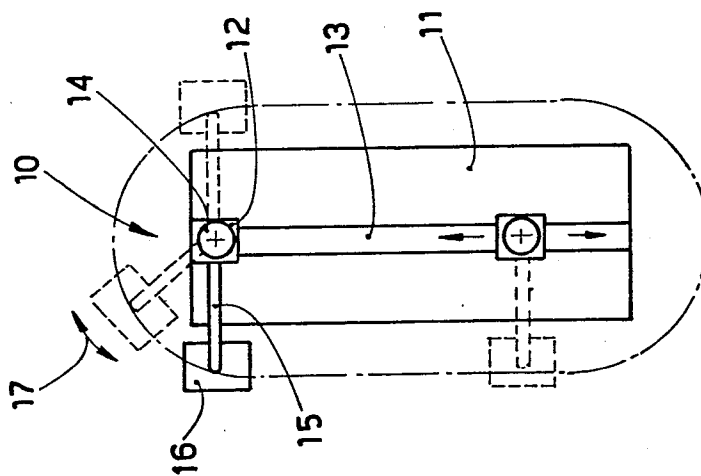
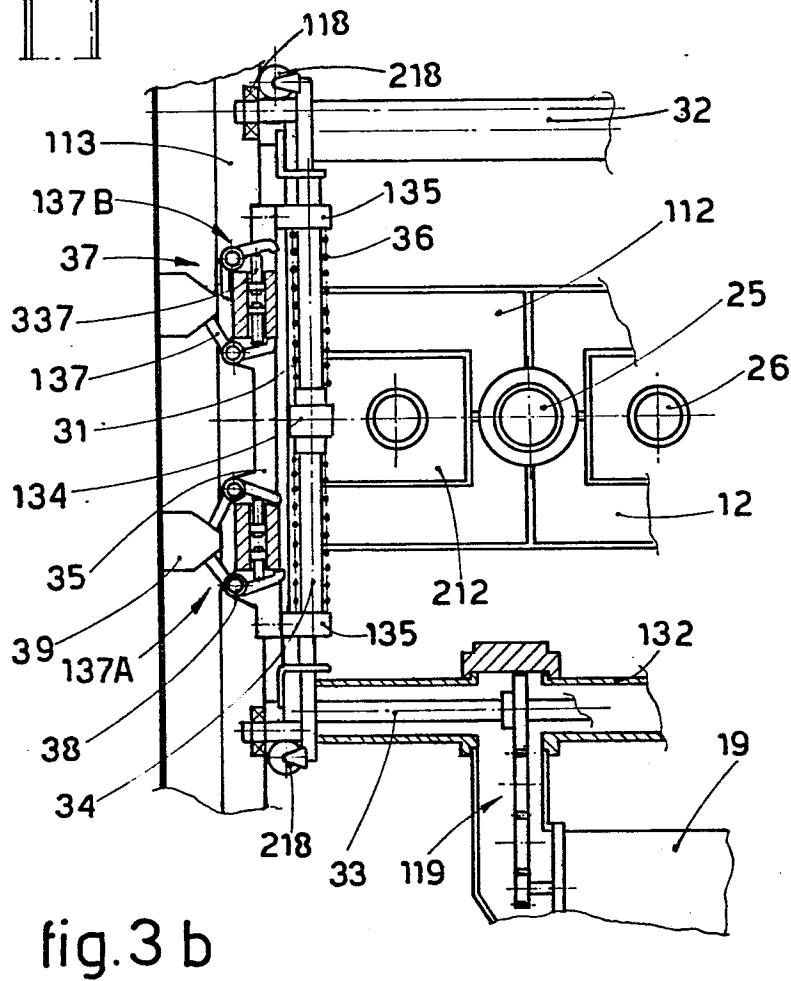
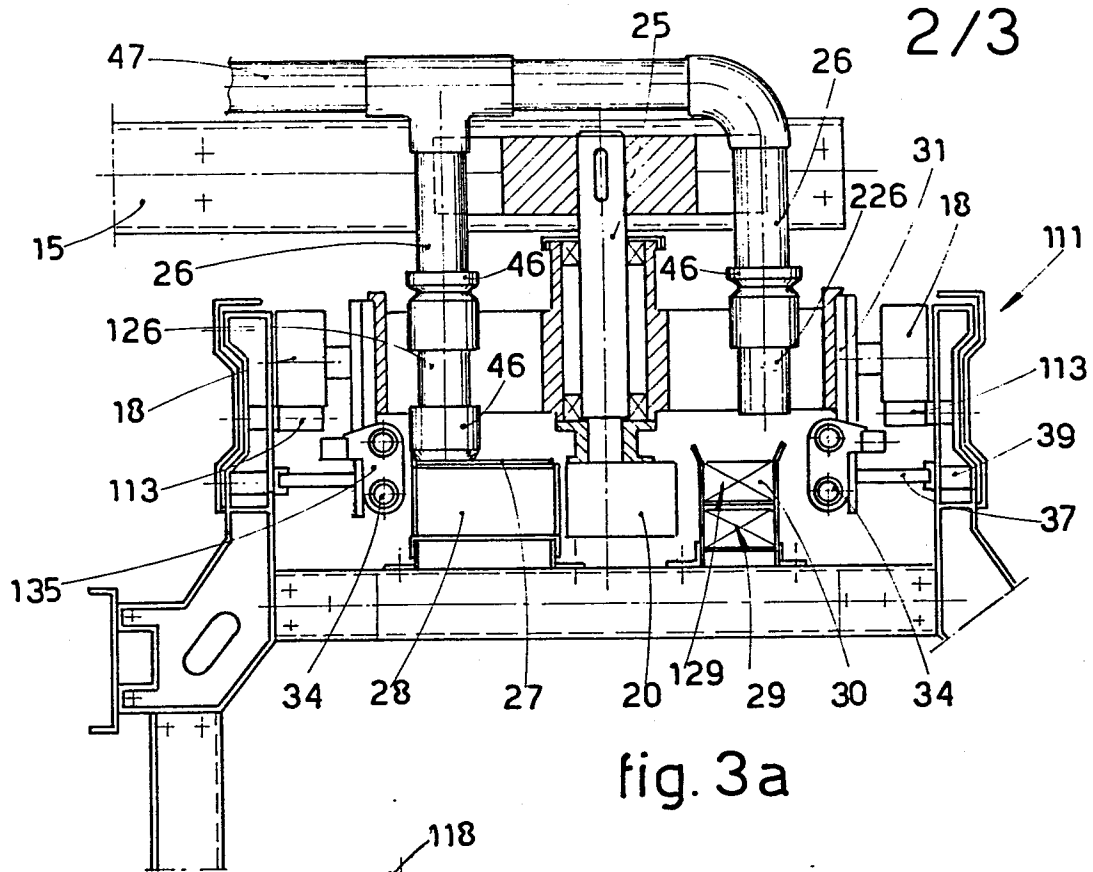


fig.1

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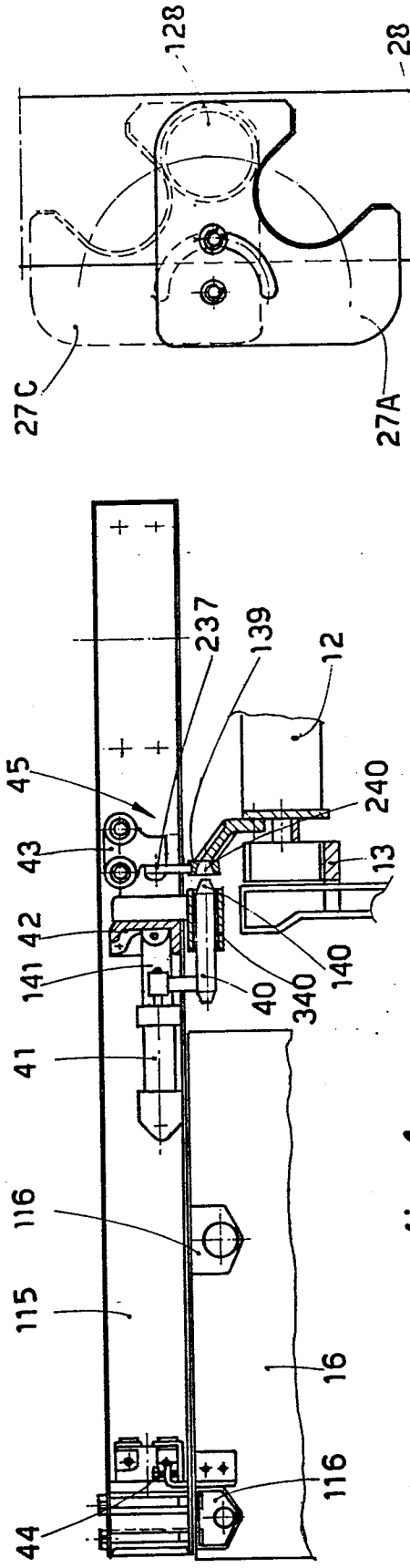


fig. 4a

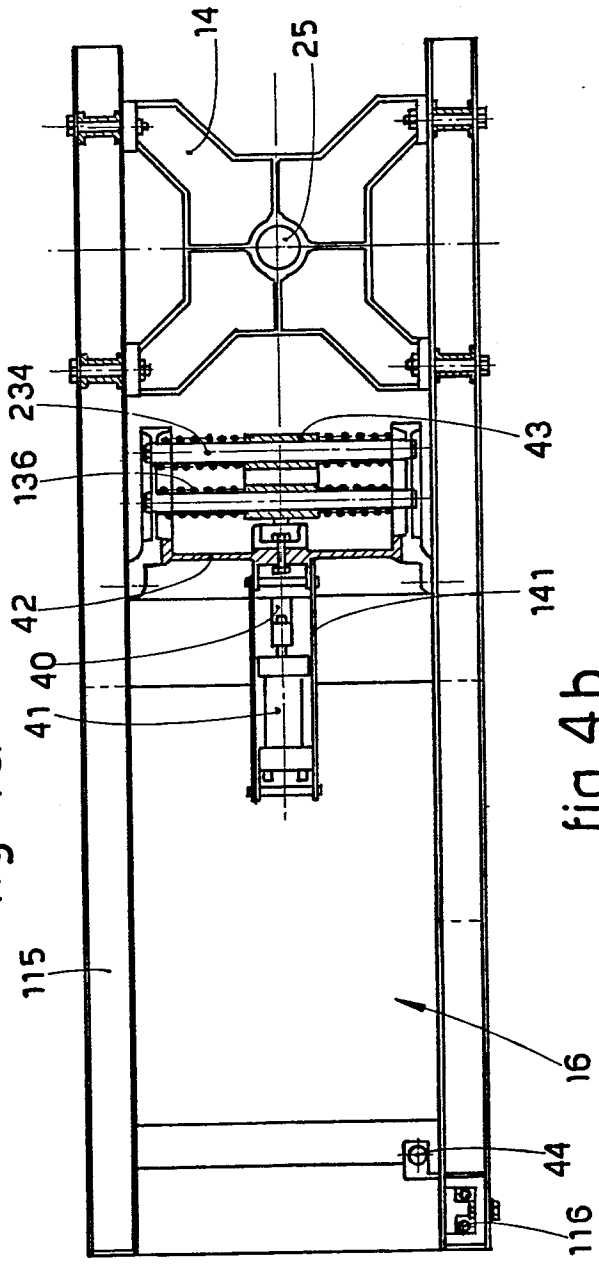


fig. 4b

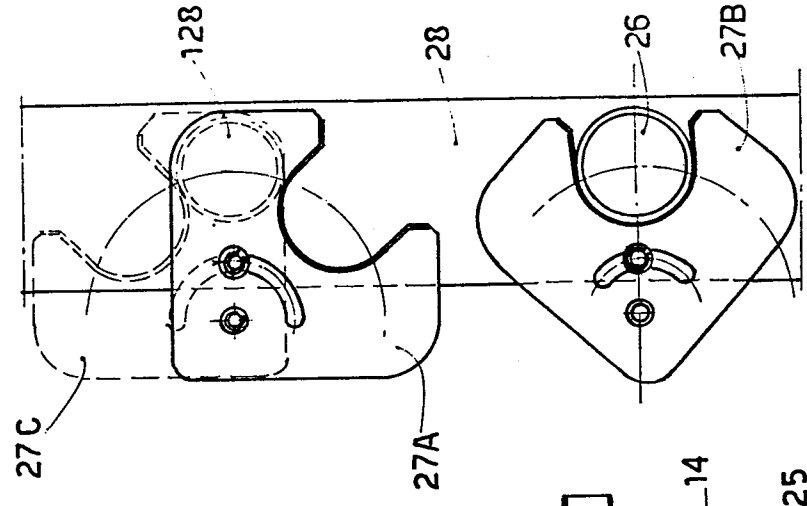


fig. 3c

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European Patent
Office

EUROPEAN SEARCH REPORT

0124151

Application number

EP 84 20 0399

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)
X	DE-A-2 416 304 (ZINSER) * Whole document *	1,3-5 8	D 01 H 15/00 D 01 H 15/02 B 65 H 67/04
X	--- DE-A-2 612 660 (COGNETEX) * Page 19, lines 18-35; page 20; figures 3,4 *	1	
X	--- FR-A-2 137 494 (PARKS-CRAMER) * Page 11; figures 3,4,12,13 *	1,3-5	
X	--- GB-A-1 054 126 (LEESONA HOLT LTD.) * Page 2, lines 34-96; figure 3 *	1,3-6	
A	--- US-A-4 275 554 (PLATT SALO LOWELL) -----		TECHNICAL FIELDS SEARCHED (Int. Cl. 3) D 01 H B 65 H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19-07-1984	Examiner DEPRUN M.
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 O : non-written disclosure 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			