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(54)

A pinned insert and a faller.

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A pinned insert (114) is inserted into a bar (112) and held in place by adhesive extending around the trough (120) of the bar.

A channel (130) extends along the upper and rearward edge of a wall (118) of the bar, and a hook or lip (132) of the insert (114) extends downwardly into the channel (130). Movement of the insert (114) away from the wall (118) is prevented by abutment of the lip (132) with the channel (130).

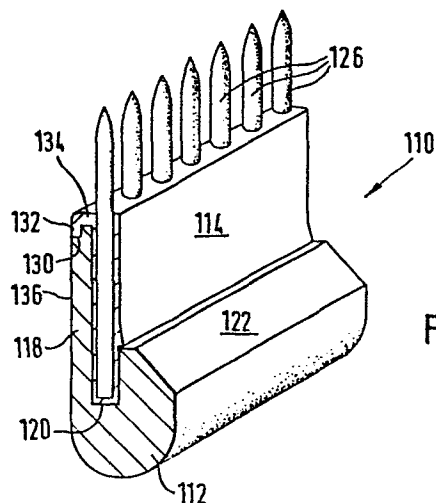


Fig.2.

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A PINNED INSERT AND A FALLER

The present invention relates to a pinned insert and to a faller including a bar on which a replaceable insert is mounted. The invention is particularly applicable to gill boxes where the pins of the insert
5 attenuate or draft slivers of fibres.

Figure 1 is a perspective view of part of a known faller 10 which is used in a gill box. The faller 10 includes a metal bar 12 into which is inserted a replaceable pinned insert 14. The insert 14 is held in place on the bar 12 by applying adhesive between substantially the complete area of contact between the two parts; i.e. on the forward facing surface 16 of the rear wall 18, in the trough 20 at the bottom of the
15 surface 16 and on the rearwardly facing surface 20 of the front wall 22.

The faller is arranged to be driven by a chain (not shown) so that when it moves in the direction of arrow
20 24, a series of fallers comb the sliver of fibres to attenuate or draft the sliver. The force exerted on the pins 26 as they attenuate the sliver is resisted by the upper portion of the insert bearing against the rear wall 18 and by the lower portion of the insert bearing against
25 the front wall 22.

When the fallers reach the end of the run in which they draft the sliver, the chain causes them to be brought rapidly out of the run of the slivers, rotated
30 through half a revolution and returned back to the start of the attenuation run. The fallers are spaced extremely close together and thus at the end of a run in which they are drafting the fibres they fold over onto each other as they rotate before being returned. Accordingly, the

extent of the faller in the forward and rearward direction is restricted, and this restriction is allowed for by terminating the forward wall at a relatively low height.

5

During the drafting or attenuating of the slivers it is inevitable that the machine will periodically get a lap on in which the sliver is taken completely around the draft run and the return run of the fallers. A lap
10 tends to exert forces on the pins in a direction opposite to that which occurs in the drafting or attenuating of the sliver. The only force between the insert and the bar which is able to resist this force is that provided by the adhesive bond between the surface 16 of the rear
15 wall 18 and the insert. That bond is often not strong enough to resist those forces, either because of the inherent weakness of the adhesive or because the adhesive has been unevenly applied, and the pinned insert comes away from the bar.

20

A further problem brought about by the use of the adhesive is that, if any adhesive is exposed, the sliver tends to become attached to that adhesive thus spoiling the run of the sliver and increasing the tendency of the
25 machine to get a lap on. It will be appreciated that, in order that the adhesive can achieve its most effective bond with the insert, it is desirable to take the adhesive right up to the top of the front and rear walls and thus, inevitably, adhesive tends to be exposed at the
30 top regions of those walls.

According to one aspect of the present invention, a pinned insert is adapted to engage or inter engage or mechanically engage with a wall of a bar on which the
35 insert may be mounted to prevent or restrict movement of the insert away from that wall. By providing an insert which can engage with a wall of the bar to prevent

movement of the insert away from that wall the insert may be positively retained on the bar as compared to the previous arrangement where the retention was dependent upon the strength and uniformity of an adhesive bond.

5 Furthermore, the insert need not necessarily have adhesive present at the location where movement of the insert away from that wall is resisted and thus adhesive may not be prone to being exposed in that region with its attendant disadvantages.

10

The pinned insert may be arranged to engage with the wall adjacent to the pins of the insert whereby the moment of any force tending to move the insert away from that wall is kept to a minimum.

15

The pinned insert may include a lip or a hook which is arranged to engage with the wall of the bar to prevent or restrict movement of the insert away from that wall. The lip or hook may extend in a direction opposite to
20 that in which the pins extend from the insert. The pinned insert may be arranged to lie against one side of a wall on the bar with the lip or hook extending over the top of the wall. The lip or hook may be arranged to be generally flush with the other side of that wall.

25

According to a further aspect of the present invention, a faller includes a pinned insert and a bar, the insert being arranged to engage with a wall of the bar to prevent or restrict movement of the insert away
30 from that wall.

The insert may be located on one side of the wall with a lip or hook of the insert extending over the edge of the wall. The wall may include a groove along its
35 upper edge in which the lip or hook lies with the lip or hook being generally flush with the other side of the wall.

The present invention also includes a faller including a pinned insert as previously specified.

The invention may be carried into practice in various ways, but one embodiment will now be described by way of example and with reference to Figure 2 which is a perspective view of part of a faller. In Figure 2, like parts to those in Figure 1 have been given the same reference numeral prefixed by the number 1.

10

The faller 110 shown in Figure 2 is for use in a chain gill box as previously described in relation to Figure 1.

15

The pinned insert 114 is inserted into the bar 112 and held in place by adhesive extending around the trough 120. Thus there is little or no chance of adhesive leaking up over the edge of the front wall 122 or the rear wall 118.

20

A channel 130 extends along the upper and rearward edge of the wall 118. The pinned insert 114 includes a hook or lip 132 extending downwardly along the complete length of the insert from a rearwardly extending wall 134, the lip being received within the channel 130 and the lip lying generally flush with the rear surface 136 of the rear wall 118.

In use, the insert 114 is able to remain securely attached to the bar 112 upon application of a force to the pins in a direction opposite to that which occurs in drafting the sliver as the lip 132 abuts the channel 130. Furthermore, as the lip abuts with the channel in the region of the upper edge of the wall the force provided to oppose that almost immediately adjacent force being exerted by the slivers on the pins 126 does not

have to oppose any great moment created by that force.

As the lip is flush with the rear surface of the rear wall, the faller does not take up any more space in
5 the forward and rearward direction and thus a chain gill can be operated with the same arrangement of fallers as that of a chain gill having fallers as shown in Figure 1.

The channel 130 can be machined at the same time as
10 the remainder of the bar is shaped. Alternatively existing bars can have the channel machined out of them and, if desired, the rear wall can also be reduced in height in order that the shape taken up by the faller comprising the insert and the bar can remain
15 substantially the same.

The pins of the insert are held in place by a plastics body which is injection moulded around them. The lip can be formed either by injection moulding or by
20 machining the lip out of the the injection moulding.

CLAIMS

1. A pinned insert (114) adapted to engage with a wall (118) of a bar (112) on which the insert may be mounted to prevent or restrict movement of the insert away from that wall.
- 5 2. A pinned insert as claimed in Claim 1 in which the pins (126) extend from the insert, and the insert is adapted to engage with the wall of a bar on which the insert may be mounted in the region of the insert from
10 which the pins extend.
3. A pinned insert as claimed in Claim 1 or 2 including a lip or hook portion (132) arranged to engage with a wall (118) of a bar on which the insert may be
15 mounted to prevent or restrict movement of the insert away from that wall.
4. A pinned insert as claimed in Claim 3 in which the pins extend from the insert, and the lip or hook portion
20 extends in a direction opposite to that in which the pins extend from the insert.
5. A pinned insert as claimed in Claim 4 in which the pinned insert may be located adjacent to one side of the
25 wall of a bar on which the insert may be mounted with the lip or hook portion extending over the wall.
6. A pinned insert as claimed in Claim 5 in which the lip or hook portion which may extend over the wall of a
30 bar on which the insert may be mounted is arranged to be generally flush with that side (136) of the wall when mounted on the bar.
7. A pinned insert as claimed in any preceding claim
35 in which a row of pins are held in position by plastics.

8. A pinned insert as claimed in Claim 8 in which the plastics is injection moulded around the pins.

9. A faller including a bar (112) on which an insert
5 as claimed in any preceding claim is mounted.

10. A faller as claimed in Claim 9 in which the insert
is adhered to the bar, and a tortuous path is presented
from the adhesive to that portion of the pin which
10 extend from the insert.

