

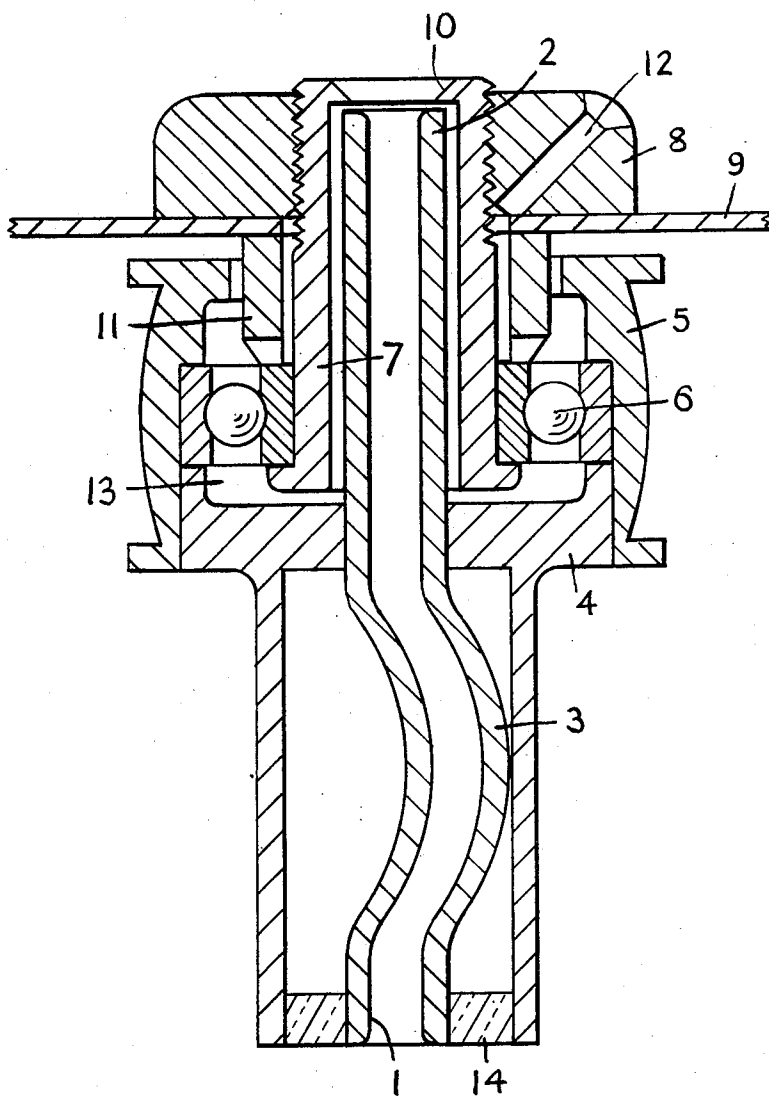
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TWISTING TUBE ASSEMBLY FOR TEXTILE MACHINERY

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TWISTING TUBE ASSEMBLY FOR TEXTILE MACHINERY

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3 Claims. (Cl. 57-128)

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This invention relates to textile drawing, twist-
ing, doubling and spinning machinery for pro-
cessing natural fibres such as cotton, wool, flax
or hemp or artificial fibres such as viscose rayon
fibres, in the form of a thread or yarn, hereinafter referred to generally as a "thread."

In the drafting of textile rovings or slivers, it
is known to pass the roving or sliver as it travels
to the collecting can through a false twisting tube
so that the roving or sliver is first twisted in
one direction and is then untwisted in the oppo-
site direction so that the collected roving or sliver
is free from twist. In the twisting of thread by
the cap, the ring or the flyer systems, it has
been proposed to pass the thread from the last
pair of drafting rollers through a pretwisting
tube from which the pretwisted thread passes to
a collecting bobbin on which it is laid by the cap,
ring or flyer. Thus British patent specification
No. 24,136/1902 describes a twisting tube in the
form of a rotatable pipe having a curved bore.

The pretwisting of the thread by the twisting
tube takes place before any winding strains are
exerted on the thread and not only permits the
use of higher delivery and collection speeds but
also ensures that the thread is maintained under
an even tension during the actual twisting oper-
ation. However, the twisting tubes as hitherto
employed have been of complicated structure,
have been expensive to produce and moreover
when a thread breaks, the rethreading of the
tube, usually referred to as "piecing up," has
been a troublesome operation.

United States patent specification No.
2,556,919 describes a twisting tube for use in the
drawing, twisting, doubling and spinning of
threads comprising a rotatable member formed
by an assembly of two or more components which
are so grooved or channelled that the member
has a continuous, smooth, wholly internal chan-
nel so shaped that thread passing through the
channel will be deflected solely by the walls of
the channel from the axis of rotation of the
member. Such tubes may be pieced up by means
of a flexible wire which can be pushed very easily
through the channel, if desired while the tube
is still rotating.

The object of the present invention is to pro-
vide a twisting tube having a simplified drive.

According to the present invention, a twisting
tube assembly comprises a single rotatable tube
which is so curved that both the entrance and
exit holes are concentric with the axis of rota-
tion of the tube and part of the channel within
the tube is eccentric to the axis of rotation of the

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tube so that a thread cannot pass through the
tube without being deflected from the axis of
rotation solely by the walls of the tube, a driving
wharfl surrounding the said tube and a single
bearing housed within the wharfl at or substan-
tially near to the middle of the wharfl. In a
preferred form of the invention, the single tube
has a straight part and a curved part of sufficient
curvature to deflect the thread, and the driving
wharfl surrounds the straight part of the tube.
The tube is conveniently constructed of steel.

The twisting tube assembly according to the
invention preferably includes within the driving
wharfl an oil well for the bearing of sufficiently
large capacity, relative to the requisite oil sup-
ply, that the risk of oil flowing from the bear-
ing is prevented or minimised. The entrance
hole of the tube is also preferably made funnel-
shaped to assist in guiding the thread into the
tube and in preventing fly from entering the
tube.

A twisting tube assembly in accordance with
the present invention is illustrated in the accom-
panying drawing which is a vertical cross-sec-
tion through the assembly.

Referring to the drawing, the assembly com-
prises a steel tube 1 having an upper straight
part 2 and a lower curved part 3 such that a
thread passing through the tube 1 will be de-
flected by the curved surface of the part 3. The
tube 1 is pressed and sealed into a housing 4
which in turn is pressed into a pulley or wharfl
5 housing a ball race 6. A stationary pillar 7
surrounds the upper part 2 of the tube 1 and a
lock nut 8 holds the assembly on a mounting
plate 9 secured to the machine frame (not
shown); the pillar 7 has a funnel-shaped en-
trance 10 which serves to prevent the entrance
of fly into the tube 1. A spacing collar 11 is
secured to the plate 9 to centralise the race 6. The
nut 8 has an oil-channel 12 leading, by way of
a hole in the plate 9 and grooves in the collar 11,
into an oil well 13 the lower part of which is
sealed off by the joint between the tube 1 and the
housing 4. The capacity of the oil well is made
large compared with the oil requirements of the
race 6 so that during running any excess oil will
be thrown by centrifugal force on to the sides of
the well 13 and will then be maintained within
the well. The lower edge of the tube 1 is held
centrally within the housing 4 by a rubber ring 14.

What we claim is:

1. A twisting tube assembly comprising a single
rotatable tube which is so curved that both the
entrance and exit holes are concentric with the

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axis of rotation of the tube and part of the channel within the tube is eccentric to the axis of rotation of the tube whereby a thread cannot pass through the tube without being deflected from the axis of rotation solely by the walls of the tube, a driving wharl surrounding the said tube and a single bearing housed within the wharl in the vicinity of the middle of the wharl.

2. A twisting tube assembly comprising a single rotatable tube the entrance and exit holes of which are concentric with the axis of rotation of the tube, the said tube having a straight part and a curved part of such a curvature that part of the channel is eccentric to the axis of rotation of the tube whereby a thread cannot pass through the tube without being deflected from the axis of rotation solely by the walls of the tube, a driving wharl surrounding the straight part of the said tube and a single bearing housed within the wharl in the vicinity of the middle of the wharl.

3. A twisting tube assembly comprising a single

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rotatable tube the entrance and exit holes of which are concentric with the axis of rotation of the tube, the said tube having a straight part and a curved part of such a curvature that part of the channel is eccentric to the axis of rotation of the tube whereby a thread cannot pass through the tube without being deflected from the axis of rotation solely by the walls of the tube, a housing into which the said tube is secured, a driving wharl secured to the said housing so that it surrounds the straight part of the tube and a single bearing housed within the wharl in the vicinity of the middle of the wharl, the said tube, housing and driving wharl being so constructed and secured together to provide an oil well within the driving wharl whereby the bearing can be lubricated.

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No references cited.