March 7, 1950 E. COTTERILL 2,499,726

FLIER FOR DOUBLE TWIST MACHINES

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Fig. 1

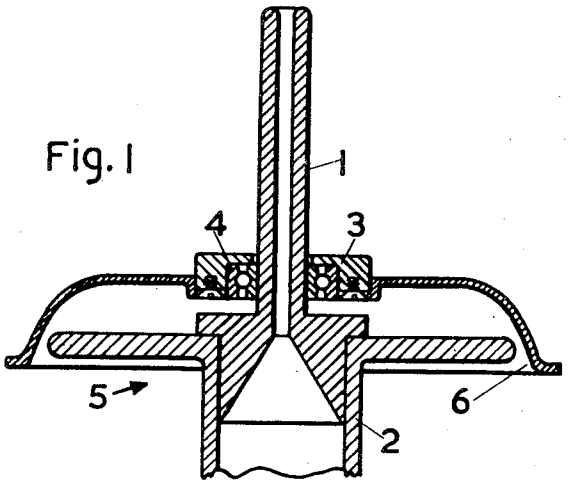
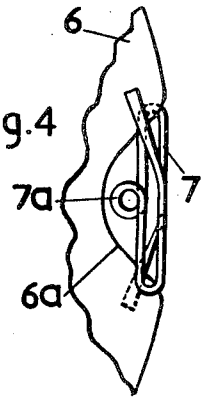


Fig. 4



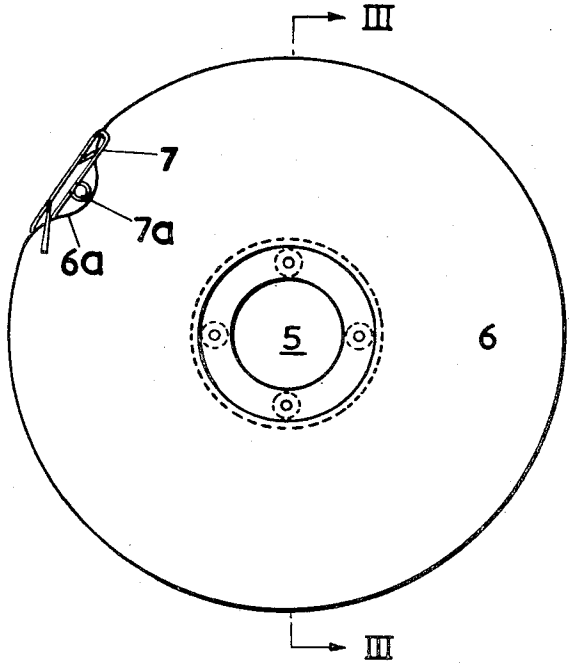


Fig. 2

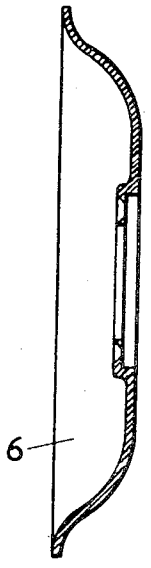


Fig. 3

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FLIER FOR DOUBLE TWIST MACHINES

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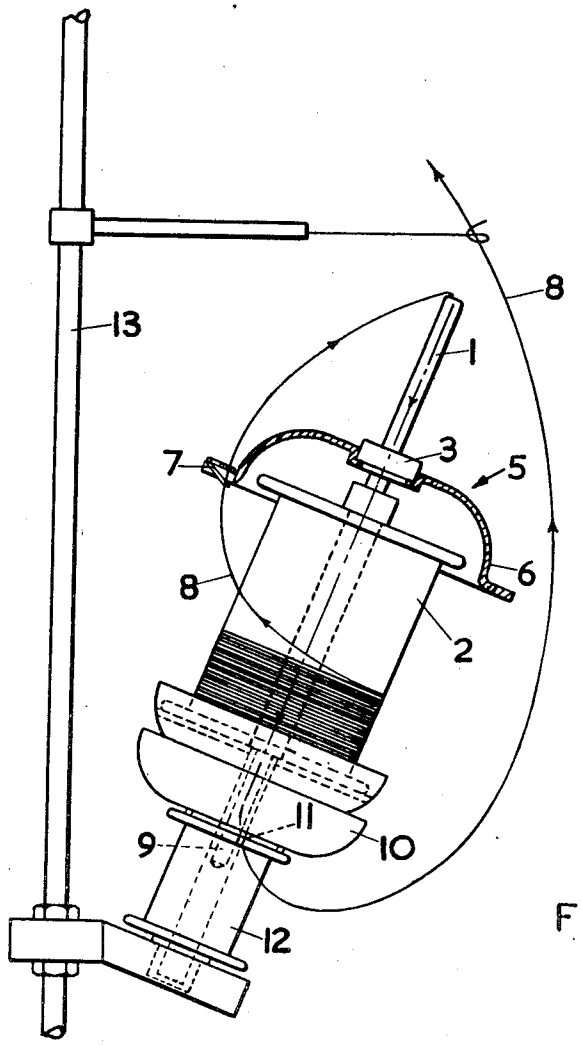


Fig.5

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UNITED STATES PATENT OFFICE

2,499,726

FLIER FOR DOUBLE TWIST MACHINES

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Application January 28, 1949, Serial No. 73,339
In Great Britain January 24, 1947

2 Claims. (Cl. 57—58)

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This application is a continuation in part of application Serial No. 1,816, filed January 12, 1948.

This invention relates to apparatus for twisting yarn.

When twisting yarn with the help of a double-twist spindle, wherein yarn is drawn off from the end of a bobbin or equivalent package it is normally found advantageous to provide a guide which may take the form of a fixed disc with a smooth edge around which the yarn runs or which may be a rotatable flyer in the form of a wire framework carrying an eyelet as a thread guide through which the yarn passes and in so doing causes the flyer to rotate. Such wire frameworks are expensive to produce and are fragile so that they readily become distorted in use.

It is the object of the present invention to provide a flyer which is reasonably inexpensive to produce and is strong enough to withstand factory usage.

According to the present invention a flyer for mounting at the end of a bobbin in double-twist spindle apparatus for twisting yarn comprises a thin disc of shallow dish-shape, part of the edge of which is cut away, said disc having a central opening for mounting it on a bobbin so that it can be rotated freely relatively to the bobbin and a thread guide in the form of a wire clip fixedly clipped on the edge of the disc at the part which is cut away so that the eye is just within the periphery of the disc.

The flyer is preferably a disc pressed from cellulose acetate with a metal wire thread guide inserted in the edge. A suitable thickness for the disc is 0.040 inch.

The centre of the disc can conveniently have a circular or other opening which fits closely over a collar freely mounted, for example by ball bearings, on the spindle carrying the bobbin.

The flyer of the present invention is of particular value when employed with a double-twist spindle in which the yarn is drawn off a stationary bobbin, through a flyer, down through a hollow spindle carrying the bobbin out through a rotating member beneath the bobbin and then as a balloon, to a winder mounted above and independent of the bobbin.

The thread guide on the edge of the disc may, if desired, be made of stainless steel wire in the form of an eye or clip which can be clipped onto the edge of the disc. The disc itself may be conveniently cemented onto a plastic hub which is shaped to make a freely rotatable fit around a spindle carrying the bobbin or, in the case of the double-twist spindle, around a hollow spindle extending from a hollow plug or cap fitting into the end of the bobbin. Any suitable bearings may be provided between the hub and the spindle to ensure free rotation.

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The flyers according to the invention as compared with double-twist flyers used hitherto have the advantages that they are cheap and easy to manufacture, they can be subjected to considerable mishandling without damage and if damaged can be readily smoothed down and used again; discs according to the invention made from cellulose acetate are also light in weight, have excellent strength and shock-proof properties and can readily be kept smooth and polished.

One form of flyer constructed in accordance with the present invention is illustrated in the accompanying drawings in which,

Figure 1 is a section through the top part only of a double-twist spindle including a flyer according to the invention,

Figure 2 is a plan of the flyer,

Figure 3 is a section on line III—III of Figure 2,

Figure 4 is a plan of the thread guide which clips on the flyer,

Figure 5 is a side view, partly in section, showing the general assembly of a double-twist spindle including a flyer according to the invention.

In Figures 1 to 4, the assembly for a twist-spindle is shown, including a hollow cap 1 fitting into the top of a bobbin 2 and carrying a collar 3 rotatably mounted on a ball bearing 4. A flyer 5, fitted closely over the collar 3, consists of a cellulose acetate disc 6 and a metal guide 7 a part 6a of which is cut away so that the eye 7a of the guide is just within the periphery of the disc 6 clipped onto the edge of the disc 6. The guide 7 is made by cutting a length of wire, e. g. of stainless steel, flattening the ends and then bending it as shown in Figure 4.

In the assembly shown in Figure 5, yarn 8 is withdrawn from the stationary bobbin 2, passed through the guide 7 of the flyer 5, then down through the hollow cap 1, the centre of the bobbin 2 and a hollow spindle 9 carrying and rotating a cap 10, through an opening 11 in the hollow spindle 9 and out through a slot in a wharl 12 and finally as a balloon to the collecting bobbin (not shown). The hollow spindle is rotated through the wharl 12 and the assembly secured to the frame 13 at an angle in the usual manner.

What I claim is:

1. A flyer for mounting at the end of a bobbin in double-twist spindle apparatus for twisting yarn comprising a thin disc of shallow dish-shape, part of the edge of which is cut away, said disc having a central opening for mounting it on a bobbin so that it can be rotated freely relatively to the bobbin and a thread guide in the form of a wire clip fixedly clipped on the edge of the disc at the part which is cut away so that the eye is just within the periphery of the disc.

2. A flyer as claimed in claim 1 wherein the disc is made of cellulose acetate.

ERNEST COTTERILL.

No references cited.