Jan. 14, 1958 R. B. NEWTON 2,819,581

TWISTER HEAD

Filed Nov. 4, 1954

Fig. 1

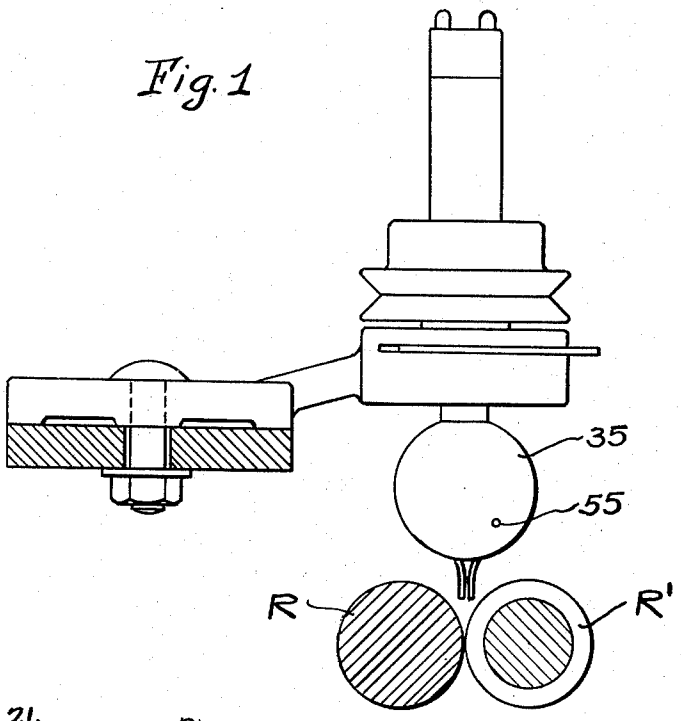


Fig. 2

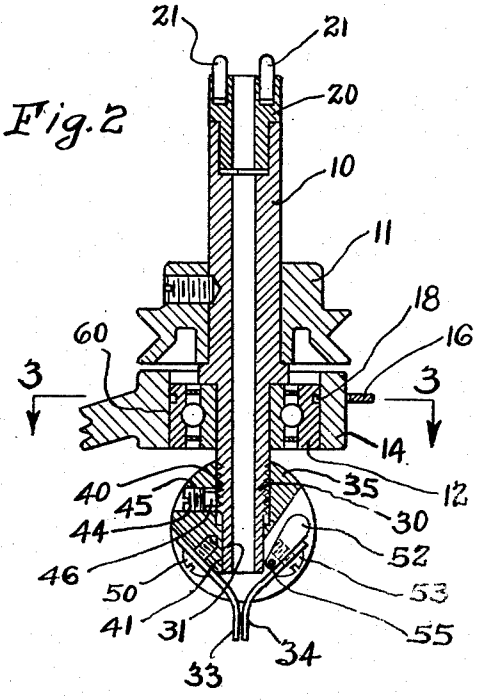
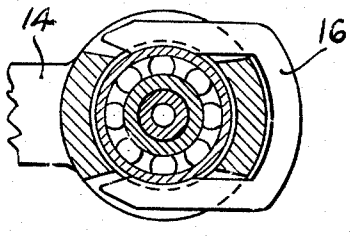


Fig. 3



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TWISTER HEAD

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2 Claims. (Cl. 57—77.4)

This invention relates to a twister head particularly designed for use in a wool spinning frame. A twister head of this general type is shown in the prior patent to Hendrickson and Mitchell, No. 1,774,371, which issued by assignment to Whitin Machine Works, the assignee of this present application.

In this general type of twister head, the roving is passed down through a vertically-rotated tubular member and is loosely engaged by gripping members or nippers mounted at the lower end of said tubular member.

It is customary to provide one gripping member which is fixed to the rotated tubular member, and a second gripping member which is pivoted on said tubular member and is movable by centrifugal force to engage the roving.

One object of the present invention is to provide duplicate and interchangeable fixed and movable gripping members or nippers.

A further object is to provide a twister head in which all parts are disposed within a surface of revolution, and in which no parts project beyond said surface. I also provide convenient means for raising or lowering the gripping members relative to the tubular member and drawing rolls, and for preserving a selected vertical adjustment.

Other features of the invention relate to the provision of an improved bearing construction for the tubular member, and to the provision of improved means for securing the twister head in a supporting frame but permitting convenient removal therefrom.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

A preferred form of the invention is shown in the drawings, in which—

Fig. 1 is a side elevation of a twister head embodying my improvements;

Fig. 2 is a vertical sectional side elevation of the twister head shown in Fig. 1; and

Fig. 3 is a sectional plan view, taken along the line 3—3 in Fig. 2.

Referring to the drawings, my improved twister head comprises a vertical tubular member **10** having a driving whirl **11** mounted thereon and also provided with a sealed anti-friction bearing **12** which is mounted in a fixed bracket **14** and which is held therein by a U-shaped plate or member **16**. The bracket **14** is slotted to receive the two legs of the plate **16**, and the bearing **12** has a groove **18** adapted to receive the inner edge portions of said legs. These edge portions have slightly recessed inner faces, and the entire member **16** is sufficiently resilient to permit the inner edge portions thereof to be snapped in place as shown in Fig. 3. The plate **16** thus determines the vertical position of the member **10**.

The tubular member **10** is provided at its upper end with the usual cap **20** and the usual oppositely-disposed and hardened steel pins **21**. The lower part of the tubular member **10** is threaed at **30** and has a reduced lower end portion **31**.

Roving-engaging gripping members or nippers **33** and **34** are mounted in a head **35** which may be formed of aluminum or other relatively light metal and which is preferably substantially spherical, as clearly shown in the drawing.

The head **35** has a cylindrical opening **40** loosely fitting the threaded end portion **30** of the tubular member **10**, and also has a cylindrical opening **41** fitting the downwardly-projecting end portion **31** of the member **10**.

A screw **44** is threaded into a hole **45** in the head **35**, and a plug **46**, preferably of nylon, is inserted between the screw **45** and the threaded end portion **30** of the member **10**. By applying pressure through the screw **44**, the inner end of the plug **46** will be grooved by the threads of the end portion **30** and will thereafter act as a nut for adjustment of the head **35** upward or downward on the tubular member **10**.

By further tightening of the screw **44**, any desired adjustment may be permanently maintained. Such adjustment is frequently desired to dispose the gripping members or nippers in desired vertical relation to the drawing rolls R and R' (Fig. 1).

The gripping members or nippers **33** and **34** are exact duplicates, and the fixed member **33** is secured to the head **35** by a clamping screw **50**. The movable member **34** is secured to a weight **52** by a screw **53**, and the weight **52** is pivoted on a cross-pin **55** fixed in the head **35**.

With this construction, it will be seen that all parts of the gripping members except their extreme lower ends are mounted within the spherical surface of the member **35**, so that air resistance is minimized and that circulation of air by the rotating twister heads is substantially avoided. This results in much cleaner operation of the spinning frame.

Attention is called to the fact that the opening **60** in the bracket **14** which receives the bearing **12** is of larger diameter than the head **35**, so that withdrawal of the U-shaped plate **16** permits free upward removal of the entire twister head for repairs or other desired purposes.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a twister head, a vertically-disposed rotated tubular member, a bearing for said member, a pair of gripping members one of which is relatively fixed and the other relatively movable with respect to the tubular member, a head in which said gripping members are mounted, said head having an outer and substantially spherical surface, and all parts of said gripping members except the substantially axially disposed extreme lower end portions thereof being disposed within said spherical surface and shielded from air resistance.

2. The combination in a gripping head as set forth in claim 1, in which the tubular member has a threaded portion in its lower part, and in which the head has a

plain cylindrical recess fitting said threaded portion, an impressionable plug mounted in said head and adjacent said threaded portion, and a screw effective to seat said plug against said threaded portion and in threaded engagement therewith, whereby said head is positively and axially adjustable on said tubular member by rotary movement of said head relative to said member.

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