Feb. 24, 1948. L. H. CRANE 2,436,632

REPLACEABLE PORCELAIN TWISTER HEAD

Filed Jan. 11, 1946

FIG. 1.

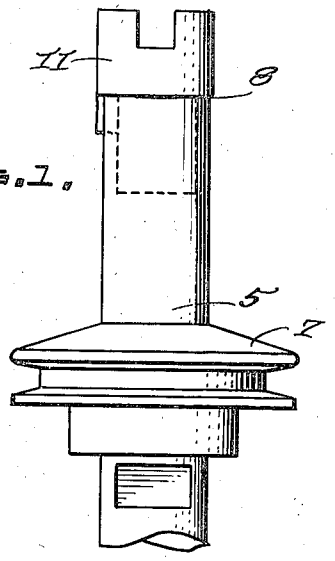


FIG. 2.

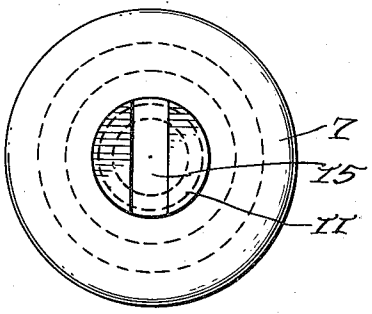


FIG. 3.

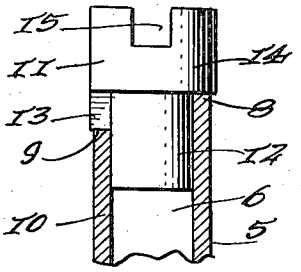


FIG. 4.

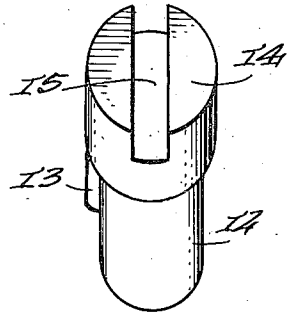
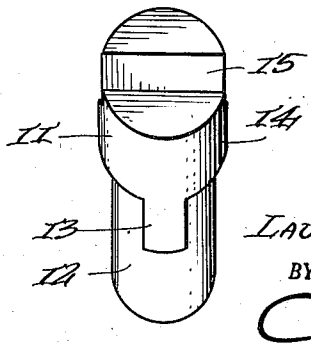


FIG. 5.



INVENTOR.
LAURENCE HART CRANE,
BY
Carl Miller
ATTORNEY

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REPLACEABLE PORCELAIN TWISTER HEAD

Laurence Hart Crane, Camden, Maine

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2 Claims. (Cl. 57—128)

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This invention relates to a twister head for use in making yarn, and one of its objects is to provide a replaceable twister head which have a harder and smooth wearing action against the sliding movement of the roving, than is possible with steel, and which will not require a replacement of the steel pulley or wheel head when the wear surface of the twister head is impaired, and its replacement is necessary.

Another object of the invention is to combine with the steel shank of a twister head a renewable wear surface of hard wearing porcelain, which will interlock with the steel shank and provide a slotted top to receive the roving, and which will wear smoothly and not impair the yarn being manufactured by the aid of the twister.

With the above and other objects in view the invention comprises certain new and useful combinations, constructions and arrangements of parts, clearly described in the following specification, and fully illustrated in the accompanying drawings, in which:

Figure 1 is a front view of the replaceable porcelain twister head, showing the device in use.

Figure 2 is a plan view thereof.

Figure 3 is a sectional view thereof.

Figure 4 is a perspective view of the porcelain head.

Figure 5 is also a perspective view of the porcelain head, but at right angles to that of Figure 4.

Referring to the accompanying drawings, which illustrate the practical embodiment of the invention, 5 designates a steel shank, which is formed with an axial bore or hole 6, and provided with the usual pulley shaped wheel 7, located below the upper end 8 of the shank 5. This upper end is disposed at right angles to the shank 5, and is formed with a longitudinal keyway 9 in one side of its tubular wall 10.

It is the usual practice to provide a slot in the upper end of the steel shank 5, through which the roving runs and the relative motion generated between the slotted head of the twister and the roving causes considerable wear on the engaged surfaces of the twister. In its original condition the steel surfaces are ground and polished, so that a smooth sliding motion is obtained. But when the sliding motion of the roving against the twister destroys the original polished surface the natural grain of the steel is exposed, and unequal wear results in the formation of small abrasive points on the steel.

These fine steel projections or points, and the ridges which are also formed, result in an excessive wear on the roving and as this wear increases the quality of the yarn deteriorates.

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In carrying out my invention I employ a twister head 11, which is cast from a single piece of hard porcelain, made from material which produces in its finished condition a fine grain and non-porous structure. This twister head includes a shank 12, which fits loosely in the bore 6, and this shank is formed with an integral key 13, which fits in the keyway slot 9 of the tubular shank 5, and thereby locks the shank 12 to the steel shank 5.

The porcelain twister head 11 is also formed with a cylindrical head portion 14, which is provided with a transverse end slot 15, of standard proportions, which receives the traveling roving. The external surface of the head portion 14, including the confronting sides and bottom face of the slot 15, are finished with a hard glaze, which provides a smooth wear surface. Before this glaze is applied the surface of the porcelain may be ground to remove all fine projections or irregularities formed by the usual casting and baking operation.

In use the porcelain and replaceable twister head operates no differently than the standard steel twister head, but it is found that the quality of the yarn produced by the use of the twister head remains at a higher level, and that replacements are reduced to a minimum. When it becomes necessary to replace the twister head the porcelain body 11 is removed and a fresh one inserted and coupled or keyed in position in the steel shank 5.

The steel shank is not subjected to any material wear, and does not itself engage the roving or come in contact with it. The porcelain twister head offers greater resistance to wear and the wear is more uniform upon its engaged surfaces, so that the roving or yarn is not impaired by the surface of the twister, after wear is established upon it.

As to the location of the device when in use, it is directly over the spindle and receives the roving from the feed rolls, and that the feed rolls are between the roving spools and the mock twister head, the mock twister head being directly over the spindle.

It will be further noted that the device cooperates with the roving in that it agitates the roving and imparts strength to the same so that it flows through the twister head tube to the bobbin spindle.

It will thus be seen that there is provided a device in which the several objects of this inven-

tion are achieved, and which is well adapted to meet the conditions of practical use.

It is understood that various changes in the details, size and proportions of the twister end, and in the coupling against relative rotation, may be resorted to in carrying out the invention, as defined by the claims hereof.

Having described the invention, I claim as new:

1. In a replaceable porcelain yarn twister head adapted to be inserted into the end of a hollow yarn twister, the features including a wide cylindrical head having a transverse open slot in the end thereof and a cylindrical shank of lesser diameter than that of the head which is integral therewith and presenting a shoulder beneath said head adapted to rest directly upon the end of said yarn twister.

2. A yarn twister head according to claim 1 in which an integral spline extends down upon the shank from the head angularly at substantially right angles with respect to the direction of the transverse open slot upon the end of said head.

LAURENCE HART CRANE.

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