March 29, 1932. O. W. SCHAUM 1,851,686

WHORL

Filed April 18, 1930

Fig. 1.

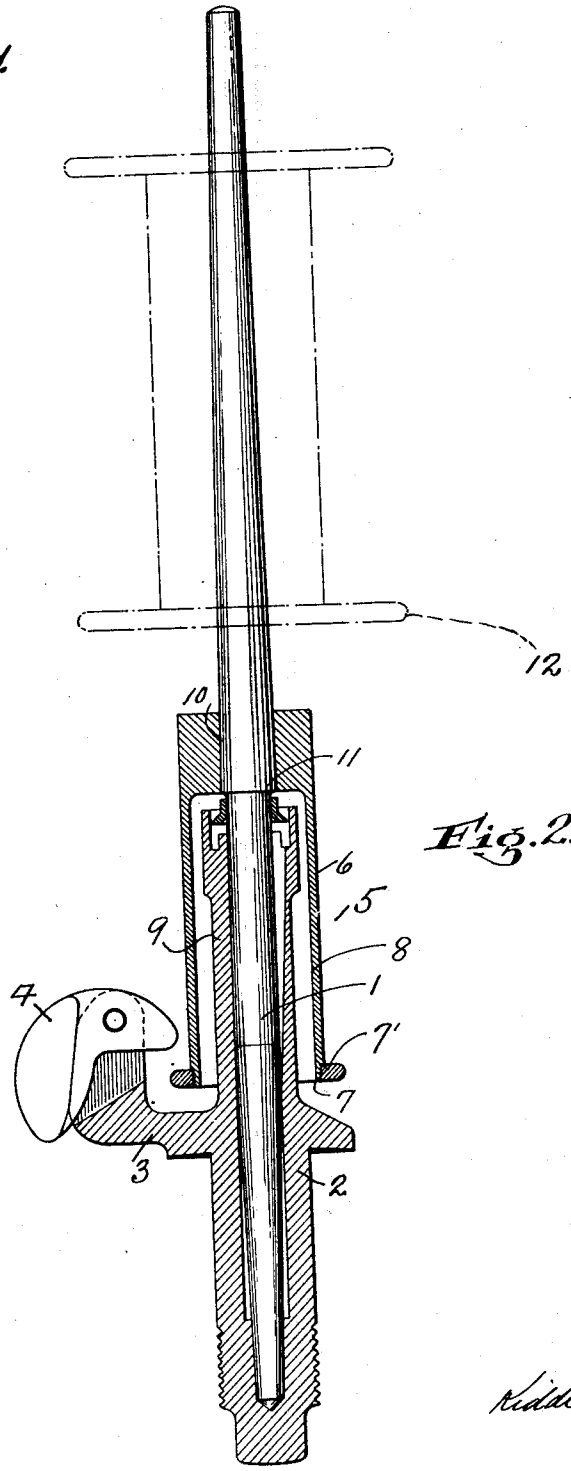


Fig. 3.

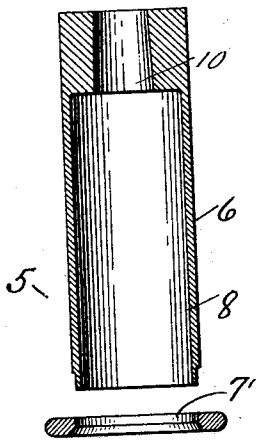
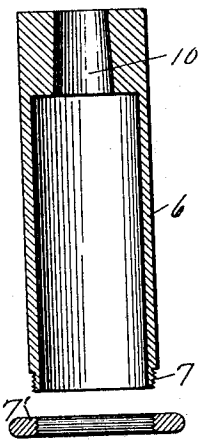


Fig. 2.



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UNITED STATES PATENT OFFICE

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WHORL

Application filed April 18, 1930. Serial No. 445,269.

My invention relates to whorls for spinning and twisting machines and has for one of its objects the provision of a whorl of improved construction which enables such devices to withstand successfully the rough usage to which whorls are subjected and a construction in which the cost of manufacture is materially reduced.

In spinning and twisting machines the bobbin is frictionally held in place on the tapered spindle of the whorl and when it is desired to remove the bobbin from the spindle it becomes necessary oftentimes to strike the lower end of the bobbin with a mallet or other instrument in order to loosen the bobbin and enable it to be removed.

The whorl is held in place in its bearings by a latch and when striking the bobbin unless care is exercised in this operation the flange of the whorl will be driven against the latch and chipped and thereby rendered useless.

My invention provides a construction wherein the likelihood of chipping of the flange of the whorl is reduced to a minimum and wherein should the flange be chipped it may readily be removed and be replaced by a new flange instead of requiring replacement of the whole whorl as is now necessary.

In the drawings wherein I have illustrated embodiments of my invention,

Fig. 1 is a sectional elevation of one form of my improved whorl;

Fig. 2 is a sectional elevational view of the whorl pulley before assembly; and

Fig. 3 is a sectional elevational view of a whorl pulley of modified construction.

Referring to the drawings in detail and first of all to Figs. 1 and 2, 1 designates a whorl spindle rotatable vertically in a fixed bearing 2. This bearing is provided with a lateral extension or bracket 3 carrying a pivoted latch arm 4 provided for latching the whorl in its bearing.

5 designates the whorl pulley which is made from bar stock of substantially the same diameter as the desired finished body diameter thereby reducing the cost of finishing to a minimum. The lower end of the whorl body 6 is threaded as shown at 7 so as to receive an internally threaded removable flange ring 7'.

The body portion 6 of the whorl pulley is straight sided and is bored longitudinally for part of its length as shown at 8 to receive extension 9 of the bearing 2, the remainder of the body portion being provided with a reduced tapered longitudinal bore 10 to receive the spindle 1, which from the point 11 to the upper end of the spindle is tapered so as to frictionally hold the pulley thereto to provide a drive for the spindle, and to frictionally hold the bobbin 12 on the spindle for rotating therewith.

In operation a belt engages the body portion 6 of the whorl pulley to rotate the whorl and the bobbin.

In removing the empty bobbin from the tapering spindle 1 the bobbin may be found to have become stuck on the spindle in which event it may be given a sharp blow with a mallet or other suitable instrument so as to free it from the spindle. In striking the bobbin the whorl may move upwardly so that the flange ring 7' strikes the latch 4 with a quick impact. In previous constructions the whorl pulleys have been one piece cast iron structures and under the conditions just outlined the flange ring aften is chipped and the whorl thereby rendered useless, not only causing shutdown but necessitating substitution of a new whorl. By my construction, however, while chipping of the flange is a very remote possibility, should the flange ring 7' become chipped it is a simple matter to remove the ring and to replace it with a new one.

It will be seen, therefore, from the foregoing that my improved construction provides a whorl, the body of which is made from bar stock substantially the same diameter as the required finished diameter with a flange of larger diameter than the body removably secured thereto.

In Fig. 3 I have provided a construction similar to that just described except in that the lower end of the body portion 6 which receives the flange ring 7' is spun over so as to hold the flange ring in place when assembled.

By constructing the whorl pulley in two

pieces which are removably secured to each other and by employing cold rolled steel, for example, in my construction, not only do I effect a saving in cost of manufacture but I effect a saving to the consumer in that when the whorl flange is broken or chipped the same may be readily replaced without requiring him to go to the expense of replacing the entire whorl pulley.

What I claim is:—

1. A whorl for spindles comprising an elongated cylindrical body portion, the upper end of the body portion being bored for the reception of a spindle, the remainder of the body portion being bored longitudinally to receive a spindle bearing, and a flange for the body portion of greater outside diameter than the outside diameter of the body portion and removably secured to the exterior of the lower end of the body portion.

2. A spindle whorl comprising an elongated cylindrical body portion of round bar stock of substantially the same diameter as the finished body diameter, said body portion being bored at its upper end to provide for the reception of a spindle, the remainder of the body portion of the whorl being bored longitudinally to freely receive a spindle bearing, and a flange ring of larger outside diameter than the body portion of the whorl removably carried on the outside of the lower end of the whorl.

3. A spindle whorl comprising a cylindrical elongated body portion bored at its upper end to receive a spindle, the remainder of the body portion of the whorl being bored longitudinally to freely receive a spindle bearing and a flange ring of larger outside diameter than the body portion, threaded upon the lower end of the said body portion.

This specification signed this 10th day of March, 1930.

OTTO W. SCHAUM.