AS THE WHEEL TURNS

by Pat Boutin Wald

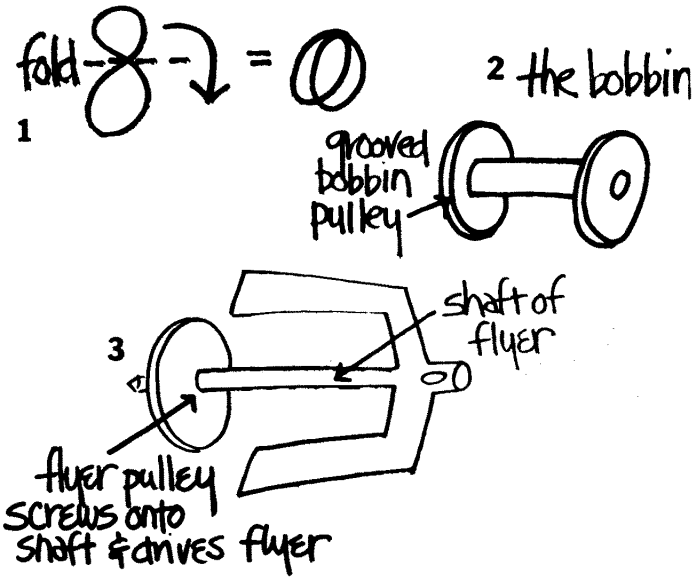
Handspinning on a spindle can be broken down into two main steps: first- drafting and twisting of the yarn onto the spindle shaft. One advantage of the spinning wheel is that these two steps take place simultaneously..

"Draw mechanism" refers to the system by which yarn is drawn onto the spinning wheel bobbin. There are three basic draw mechanisms: that of the double banded wheel, by far the most common draw system on antique wheels; scotch tension made famous by the Ashford wheel; and the tension system found on many bulk spinners that I refer to as indian head tension.

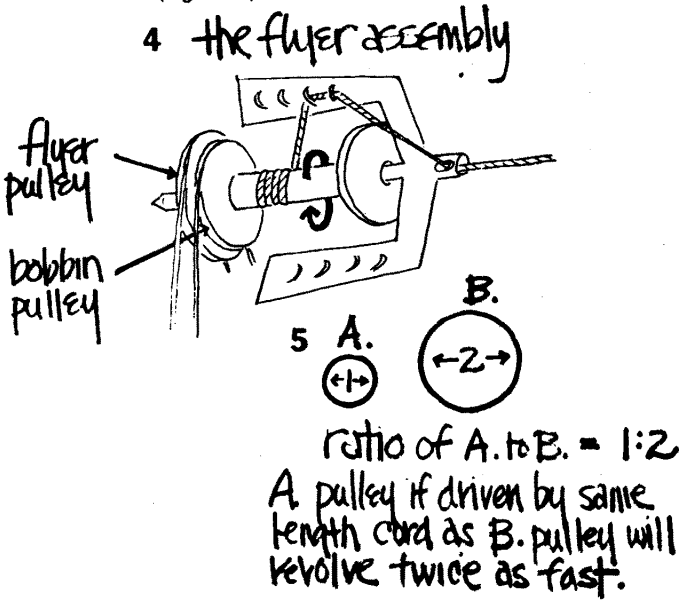
Before beginning to read the descriptions of how the different draw mechanisms work, you might want to look over the illustrations and familiarize yourself with the names of different parts of the flyer assembly.

Double Banded Draw Mechanism

Wheels using this draw system are often called two banded or double banded although **one** continuous cord drives both the bobbin and the flyer. The drive band is a figure "8" folded back upon itself (figure 1). When the drive wheel is turned, the same length of cord passes over both the pulley on the far end of the bobbin (figure 2) and the pulley screwed onto the shaft of the flyer (figure 3). The revolving bobbin and flyer put twist into the fiber. You are drafting the fiber, and the wheel (propelled by your foot) is supplying the twist.

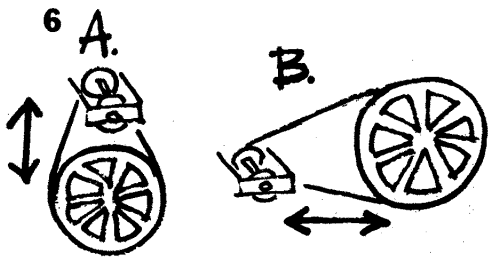


The diameter of the bobbin pulley is usually less than the diameter of the flyer pulley. The bobbin rides freely on the shaft of the flyer so the bobbin and flyer can revolve at different speeds. The bobbin pulley and larger flyer pulley are rotated by the same length of drive cord, therefore the bobbin will revolve more frequently than the flyer. (Imagine one large wheel and one small wheel rolling down a hill. The small wheel will have to revolve more times than the larger to reach the bottom of the hill.) The faster rotation causes the yarn to be drawn in and wrapped around the bobbin spool (figure 4). The greater the difference between the size of the pulleys, the faster the yarn is drawn in. The relationship of the two pulley sizes is referred to as a "ratio" (figure 5).



The pulleys will slip against the drive cord if it is very loose, or if you hold back on the yarn while spinning. The more you tighten the drive cord, the less slippage and greater the strength of draw.

A large wooded screw is a very common tension control on antique wheels. The screw can move the flyer assemble farther away from the drive wheel for increasing tension on the drive band. When turned the opposite direction, it moves the flyer closer to the drive wheel, decreasing tension. Figure 6 shows the directions the flyer moves in relation to the drive wheel for (A) castle wheel and (B) a saxony style wheel.



next month

draw mechanisms on scotch tension and indian head spinners

I'd like to express my thanks to Michael Bayer (Seattle) for first explaining to me how spinning wheels work and to Tony and Vlasta Blaha Glaski for their help in defining technical terms.