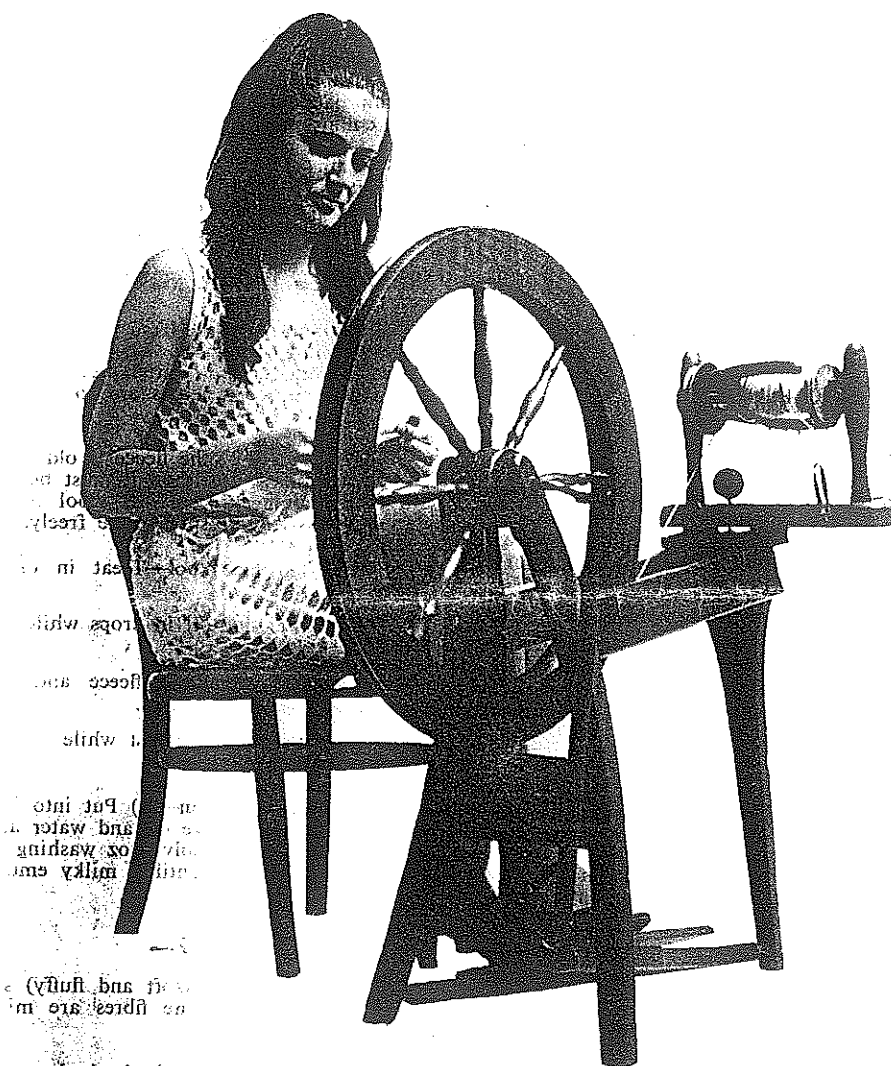


Price 30c.



# LEARN TO SPIN

and Assembling Instructions

DESIGNED AND MANUFACTURED BY

**ASHFORD HANDICRAFTS LTD.;**

P.O. BOX 180, ASHBURTON, NEW ZEALAND.

# Home Spinning for Everyone

After your spinning wheel is stained, assembled and running smoothly, the next step is to study the wool you intend to spin with.

## SELECTING THE FLEECE WOOL

Wool is an amazing fibre. It is alive and responsive to handling and manipulation. It is warm, soft, tough and hard-wearing. The natural grease "turns" both wind and rain. Because wool has an ability to trap air it can be worn with comfort from the desert to the Arctic. It provides bulk combined with lightness. Each fibre composed of overlapping scales allows wool to stretch up to 30% when dry and 70% when wet.

All wool can be spun. (Somebody once remarked—"anything with two ends can be spun.") Some types of wool are easier to spin than others. Each sheep breed produces its own characteristic fleece. Experience teaches the best type of wool for a particular purpose. Generally speaking, soft wool makes cosy wearing apparel, while coarse wool is excellent for heavy-duty work jerseys, floor rugs, etc.

If you have a choice of fleeces, select a clean open one, with at least a 4 inch staple and a count of 46-52. A beginner spinner should avoid extremes. In New Zealand, Half-breds and Romneys are good for starters. The following technical terms will help you to discuss wool with a degree of confidence. Wool is usually obtainable at bulk wool stores.

## TALK ABOUT A FLEECE

**Clean and Open**—means just that! Free from dirt stains, manure and vegetable matter. Absence of cotts, noils and matted pieces.

**Soundness**—No breaks, wasting or colour change in individual fibres. Due usually to poor feeding, climatic conditions or health. Fibres break easily when tugged or combed.

**Length**—Means length of staple, i.e., natural bundle of fibres which fall together. Length varies with breed and time of shearing. But measurement from root to tip for spinning is 4-6 inches.

**Count**—Is the quality range. The higher the count number the finer the wool. Merino has a Count up to 90; Lincoln Count 36. The Count refers to the number of 560 yard hanks obtainable from one pound of wool.

**Crimp**—Transverse wavy lines in the staple. Up to 6 crimps per inch is good for spinning. Crimp gives bulk to wool.

**Colour**—Refers to discolouration. A white fleece should be free of deep staining, though yolk which is a mixture of secretions usually washes out.

**Skirted**—All wool not matching bulk of fleece is removed from edges.

## SORTING THE FLEECE

The homespinner sorts the fleece to make spinning easier and avoids "patchy" spinning, resulting in unevenness of yarn and indifferent washing and wearing qualities.

It is necessary to spread the fleece on the floor, tips uppermost, and set aside all soiled pieces. These can be washed and used for stuffing toys, etc., or dressed with an oil preparation and spun.

Spinners find the best wool is from around the shoulders and part way down the back. The finest wool is around the face, eyes and neck. However, neck wool is often compacted and requires more preparation. Fleece from the sides and lower back is slightly coarser, but it's all good wool. If you are sorting a coloured fleece, make piles of the wool according to density of colour. Varying shades of blacks, browns and greys knit into the most fascinating and subtle fair isles.

## STORING FLEECE FOR FUTURE USE

Use cardboard cartons or heavy brown paper bags. Do not pack too tightly. Seal the packets and label with type, colour and date. This will save a lot of conjecture later.

Moths do not readily attack raw wool, but mothballs can be used if desired. Inspect the cartons every three months, for your own satisfaction.

## PREPARING WOOL FOR SPINNING

All wool benefits from being carefully prepared and makes spinning so much easier. The preparation is to remove broken fibres, foreign matter, second-cuts, and incorporate air. However, some fleeces are so beautiful only the minimum of work is required.

**Dry Fleece**—If the fleece is old or for any reason has lost its natural grease, then it must be "dressed" to facilitate the spinning process. If wool is slightly warmed or placed in the sun, it spins more freely.

**Dressing the Wool**—Treat in one of the following ways:—

(a) Add olive oil in drops while carding or combing. Use only vegetable oils.

(b) Impregnate the fleece and leave rolled up in newspaper from 1 to 7 days.

(c) Keep fingers moist while spinning by dipping in oil or kerosene.

**Dressing Emulsion**—(a) Put into bottle with sprinkler top, equal parts of olive oil and water and add one quarter part ammonia; (b) Dissolve 1oz washing soda in pint water. Add to Neatsfoot oil until a milky emulsion is formed.

## TYPES OF SPINNING—

A woollen yarn (soft and fluffy) should be produced from rolags or when the fibres are mixed and lie in all directions.

A Worsted yarn is obtained when the fibres lie parallel.

**Spinning in the grease**—means unprocessed wool and full of natural lanoline. This is the most usual way to spin.

If the tips are mushy or broken, nip off with thumb nail, or cut with scissors.

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## THEY SAY—

"When I bought your spinning wheel I did not know what a wealth of happiness lay ahead."—M.D.C., Wellington, N.Z.

"I'm having such fun on my beautiful spinning wheel."—H.L.R., U.S.A.

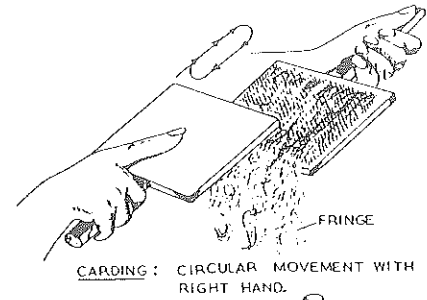
"I saw one of your wheels and was most impressed by its efficiency, design and workmanship."—P.C., New York.

"My Ashford wheel is truly a joy—adjustments are quick and easy to make."—J.E.B., Illinois, U.S.A.

"I have spun on many wheels, but your wheel is definitely the best."—M.H., Conn., U.S.A.

## CARDING

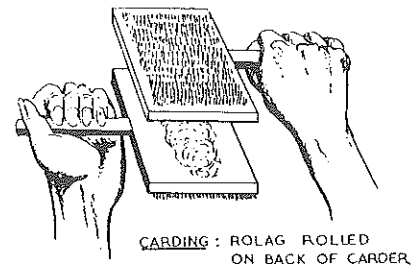
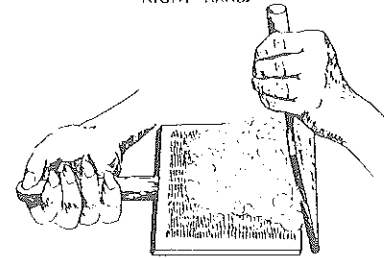
Hand cards are used in pairs and consist of metal teeth set into leather and attached to wood frames. Mark the cards for right and left hand use. Take 3 staples, spread apart and wisp the root end on upper teeth of left card. Now holding as illustrated, draw the right card across the lower edge of left card. (Do not tug and drag as this damages the wool. Carding movements are firm but light.) You will notice a fringe of wool developing. Keep it free. Replace the right card half-way on the left card. Comb gently downwards. The third time, comb the whole length of the staple. The wool is now probably on the right card. Turn the right card over, replacing wool on left card. Repeat the process until the wool is thoroughly airy, confused and without trace of noils. Now try flicking the wool on to the back of one card and rolling light to make the traditional rolag. Card up a basket of rolags. Carded wool is wonderful to spin.



## COMBING

This is to improve the conditions for spinning, so avoid heavy, sharp metal combs. A firm plastic comb is suitable. Take several staples of wool in one hand and comb about two inches from each end. To free the centre fibres hold combed ends between thumbs and first fingers, springing and tugging them apart until the fibres fluff free. Do not comb the entire length of the staple as this can be very wasteful as well as tedious.

When spinning, double tip to root and draw from one side of fold.



Dear Spinners,

Here are some good ideas which I'd like to share with you. Do you wonder where to find a pattern to fit your newly created yarn? Well, here's an easy way out. First knit a stocking stitch test piece (a three-inch square), using different size needles. Select the one which gives the best tension for yarn and purpose. Count the number of stitches per inch. Suppose it comes to  $4\frac{1}{2}$ . Example: To knit sweater for 40 inch chest. Back and front each require 20 inches, so  $20 \times 4\frac{1}{2}$ —90 stitches. Next find a pattern which says cast on 90 stitches. A child's pattern will produce a man-sized garment. Necks and raglan sleeves fit perfectly. Only alterations to patterns are sleeve and body lengths. Simple isn't it?

## INCREASES

It's easy to keep under arm fancy pattern increases correct, by simply making all increases in moss or stocking stitch. This gives a very attractive triangle on body and sleeves.

## SEWING UP HOMESPUNS

Always spin some finer yarn from the same fleece for invisible stitching.

## CHARACTERISTIC COLOUR BANDS IN FLEECE

IF YOU LIKE THESE EVENLY DISTRIBUTED on back and front of garment, work on circular needles, or have only one side seam.

## HEATHER MIXTURE

Card two or more colours at same time, but do not overmix or individual colours will be lost.

## QUICK-MAKE COT OR KNEE RUG

Use outsize knitting needles— $6\frac{1}{2}$ -7m.m. (No. 3)

Mock Turkish Stitch—multiples of 2.

Cast on 112 stitches. Row 1: K1, \*wool round needle to make 1, K2 tog,\* K1.

Repeat between \* All rows are the same. Add border as extra or bind with ribbon.

## LINEN STITCH

This stitch is quick and gives very firm texture, more like weaving than knitting. Excellent for jackets, skirts, bags, cushions, etc. Work in multiples of 2.

Row 1: \*K1, wool forward, slip 1 purlwise, wool back\* Repeat.

Row 2: \*P1, wl.bk., sl:1 purlwise, wl.fwd., K1\* Repeat

## PREVENT WHEEL SLIDING ON POLISHED FLOOR

Use a small non-skid mat or tack pieces of rubber to each foot (of the spinning wheel, of course!). When treadling, have the wheel closer so the pressure is applied directly downwards. Wear flat heeled shoes. Just a reminder in closing, co-operation rather than competition brings its own special rewards. Although many spinners have taught themselves from this simple booklet, it's fun to learn from others. If you don't know any other spinners, try a small advertisement in local newspaper. Hire a room, bring own lunch and hold a "Let's Learn to Spin" day. Write and tell me all about your good ideas.

Cheerio,

JOY ASHFORD.

"My daughter-in-law was very proud when she used my first homespun shawl to bring her first baby home from the hospital."—B.R., Wiltshire, Eng.

"Your wheel is beautiful, plain and functional."—S.P., U.S.A.

# BEGIN TO SPIN

## BEGIN TO SPIN

This is the exciting part. For best results "make haste slowly" FEET FIRST! Sit comfortably at your wheel and practise treading. Treadle slowly and practise stopping and starting. Develop a steady rhythm.

**HANDS IN HARMONY.** Tie a ball of wool or string on to the bobbin and practise spinning it up, until you can feed it in smoothly and evenly.

Feet and hands should work at approximately the same pace. You'll soon develop perfect co-ordination.

Remember the single yarn you are about to spin determines the thickness and quality of the plied yarn when it becomes a two or three-ply.

## SPINNING YOUR FIRST YARN

Treadle the wheel clockwise, i.e., to the right.

Make a final check with testing instructions for a smooth start.

## TO THREAD-UP

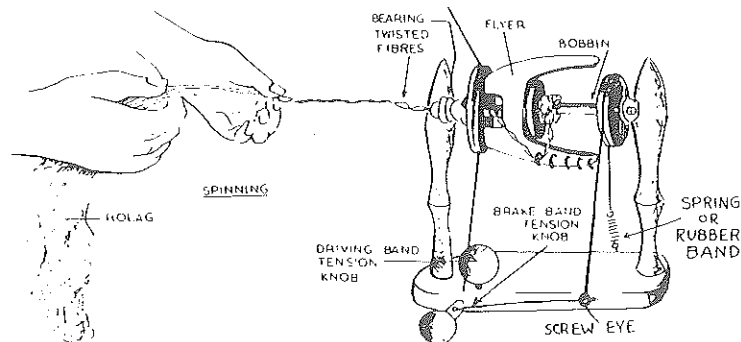
Place empty bobbin on spindle. Tie 12 inches "leader" wool to bobbin (it mustn't slip) and carry over the nearest distribution hook. Insert the threading-hook from front of spindle, and draw the leader wool through the spindle eye towards you. See brakeband is lightly in position.

1. Place rolag in left hand with leader lying on top. Begin to treadle slowly.
2. Notice how the leader begins to turn, latching on to loose fibres and at same time drawing them through the spindle and winding on to bobbin. If the yarn does not pull in, but keeps twisting and kinking, add a little more tension by screwing in the brake-band tension knob. However, too much tension causes the yarn to pull in very quickly, with the result that the beginner spinner is constantly re-threading.
3. Speed up treading and at the same time draw out from the rolag a uniform bundle of fibres. This is easily done by grasping the yarn in finger and thumb at front of spindle and using finger and thumb of other hand, ease, manipulate and draw the rolag back towards your body.
4. Release the finger grip nearest the spindle. Watch the twist running along the yarn, but do not allow it to enter the rolag. Pulling out the required fibres and controlling their thickness and amount of twist is called "drafting."
5. Now assist the yarn to feed in by moving hands towards spindle opening.
6. Continuous spinning is achieved by repeating steps 3, 4, and 5.
7. Keep moving the yarn along the distribution hooks for even filling.

This is the action:—

1. Pull out required fibres.
2. Hold at a point 4-6 inches from spindle to prevent twist entering rolag.
3. Allow fibres to twist for strength.
4. Assist the yarn to feed in by moving hands towards the spindle.

Movements can be made with either hand, whichever suits you best. Sit comfortably. With experience you will be able to make longer "drafts," up to 20 inches if desired.



**TO START A NEW ROLAG** or repair a break. Place yarn from spindle in centre of rolag (or combed wool) and draft as before. Allow plenty of overlay for a strong easy join. Do not tie knots.

A good yarn is soft and even, but should have some of the textured look which gives homespun their special individuality and fascination.

To test the yarn for its two-ply appearance, draw back six inches of twisted yarn from spindle. Now at three inches pinch yarn between finger and thumb and watch it twist together like rope. Is this what you want your two-ply to look like? If not, start drafting thicker or thinner accordingly.

## FAULTS

**OVERSPINNING**—This means too many twists and the yarn is hard, kinky and stringy. Overspun wool tends to slant when knitted.

If you are overspinning, make the following checks:—

1. Don't treadle so fast. **SLOW DOWN TREADING.**
2. Once the yarn is twisted, feed in immediately. Don't hold back.
3. Slightly increase tension on brakeband.
4. The yarn may have come off the distribution hooks or knotted around them.
5. Should there be drag or roughness in the spindle, smooth with metal file.
6. Give the breakband a light tug if the wool catches in the orifice or on the hooks, this will start the wool moving again (without altering the tension). More tension is required as the bobbin fills up.

**UNDERSPINNING** — The yarn falls apart due to insufficient twisting.

1. Reduce tension. The yarn is being pulled in before twisting sufficiently.
2. Treadle a little faster.

## WHEEL IS HARD TO TREADLE.

1. Oil all moving parts.
2. Driving belt too tight. Slacken off. Use resin on belt for added grip.
3. Lock nut (see step 7) needs releasing.

## TO CHANGE BOBBIN

Unhook brakeband and hold flyer unit. Twist bobbin upright J to release metal spindle from leather support. Slip off bobbin and replace with empty one. Check to see it runs freely on spindle.

"I love my Ashford wheel—it is a pleasure to work on and to teach on."—R.G., N.Y.

# HOW TO PLY THE YARNS

## HOW TO PLY THE YARNS

Plying is carried out to give wool added strength, bulk, texture and variety.

A single yarn is often used for weaving.

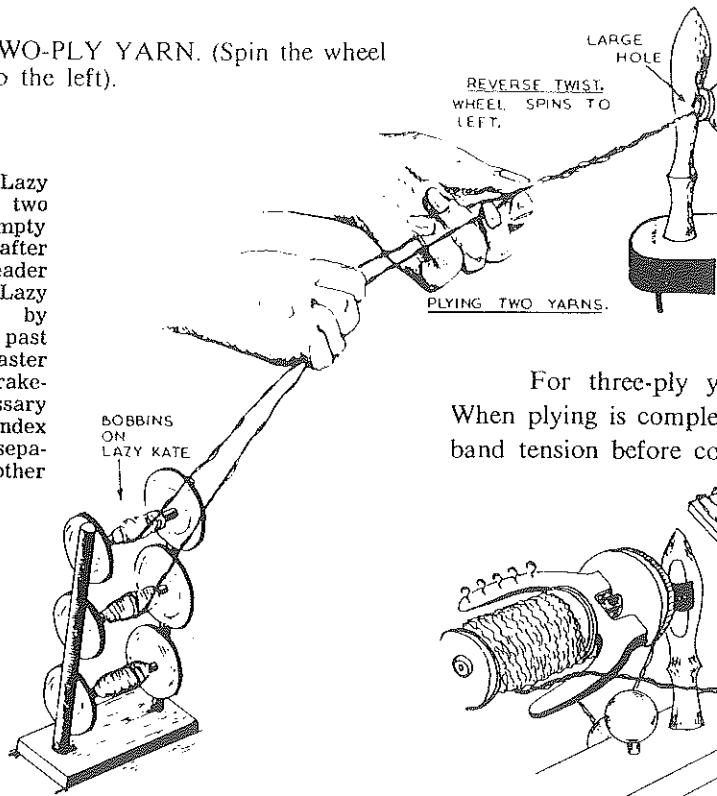
Two-ply yarn is ideal for knitting, crochet, etc.

Three-ply yarn has less texture and more strength.

Variations are achieved by plying yarns of different thickness, types and colours. The experienced spinner may like to experiment with "S" and "Z" twists for infinite varieties.

TO MAKE TWO-PLY YARN. (Spin the wheel anti-clockwise, i.e., to the left).

Place bobbin holder (Lazy Kate) on floor with two filled bobbins. Put empty bobbin on wheel and after threading, tie the leader to the two yarns from Lazy Kate. Rotate bobbin by hand until knots are past distribution hooks. Faster treading and more brakeband tension is necessary for plying. With the index finger of one hand, separate the yarns. With other

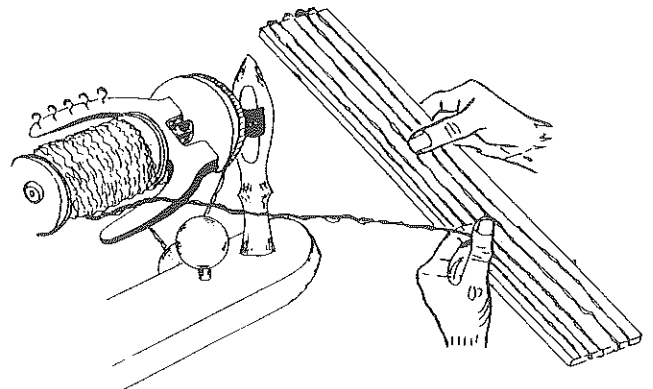


hand, slide finger and thumb away from the spindle, and hold firmly at a distance of 6-10 inches until sufficient twists are made. (Do not over twist). Now help this twisted yarn to feed-in. Repeat the process.

These are the steps:—

- a. With index finger, separate and keep control of yarns coming from Lazy Kate. Avoid jerky movements.
- b. Slide finger and thumb away from spindle.
- c. Hold the two yarns at this point until sufficiently twisted.
- d. Assist with feed-in.
- e. Add tension to brakeband as bobbin fills. Use distribution hooks to fill bobbin evenly.
- f. Add tension to driving belt if it should slip.

For three-ply yarns, use three filled bobbins. When plying is completed, slacken off belt and brakeband tension before commencing to spin again.



## SKEINING—

This is an important step to prevent tangling when washing and dyeing. Use a niddy-noddy if you have one, otherwise just wind the yarn around a piece of flat wood or tray. Do not wind too tightly. Best method of winding is to leave the bobbin on the flyer, applying a minimum of tension to prevent backlash. Tie skeins loosely in four places. Tight knots prevent a clean washing and even dyeing results.

MAKE A NIDDY NODDY by cutting a wooden coathanger in half and fix at right angles to each other on a piece of dowel approximately 20 inches long. Wind yarn in figures of eight. This will double the length of the skein.

## TWO SPEED FLYER

The wheel is now equipped with a two speed flyer and this can be aligned with the wheel so that either speed can be obtained on the one setting. Standard spinning is done on the large pulley while for faster spinning and plying change over to the small pulley. Use the larger pulley when learning. If the driving band is tied to the correct length it will be suitable for both size pulleys. 12 : 1 RATIO on large pulley, 6.5 : 1 RATIO on small pulley.

Several Accessories are available as follows:

**JUMBO FLYER UNIT:** This is proving popular when a bulky yarn is required.

Supplied with four large bobbins of 8 ounce Capacity. Orifice size  $\frac{3}{8}$ ", RATIO 4.75 : 1.

**LARGE PULLEY FLYER:** This is our standard flyer with an extra large pulley allowing for drafting a slightly thicker yarn.

Very handy for the beginner, or those with limited use of their hands. Takes standard size bobbins. Orifice size  $\frac{3}{8}$ ". Can be used in conjunction with sewing machine motor. RATIO 4.5 : 1.

# Ashford Spinning Wheel

## FINISHING YOUR WHEEL

The timber used in all Ashford Spinning Wheels is kiln dried, and due to possible difference in climatic condition, it is important to thoroughly "seal" (i.e., apply the finishing surface) as soon as possible after arrival. As well as enhancing the appearance this also protects the wood from absorbing grease from the wool. **IT CAN BE EASIER TO APPLY THE FINISH BEFORE ASSEMBLING**, but this is up to you. All rough surfaces should first be smoothed with the garnet paper supplied then all dust brushed off.

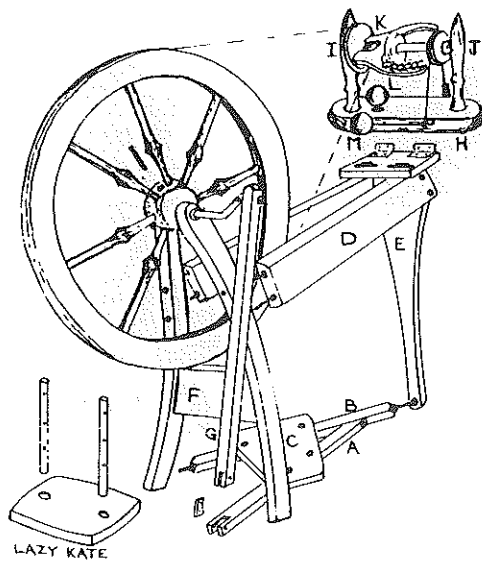
Silver Beech varies a lot in colour and although we try to evenly match all the pieces some variation is always likely. A medium to dark stain will usually cover these differences.

We recommend an oil stain followed by several coats of clear lacquer. In between each coat rub down with steel wool. Alternatively french polish can be applied with a brush or pad.

Linseed oil can be rubbed into the wood and then polished well with a wax polish.

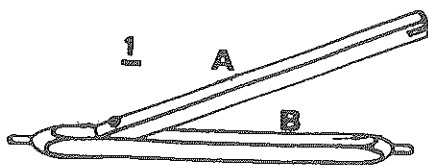
## LIST OF PARTS

Wheel	Maiden bar
Assembled pair legs	Maiden upright. large hole
Single leg	Maiden upright. small hole
Side rails (pair)	Flyer
Connecting rod	Bobbin (4)
Treadle rails (2)	Adjusting board
Treadle board	Adjusting knob
Lazy Kate base	Tension knob
Lazy Kate uprights (2)	Crank
Lazy Kate wires (3)	Packet of Hardware



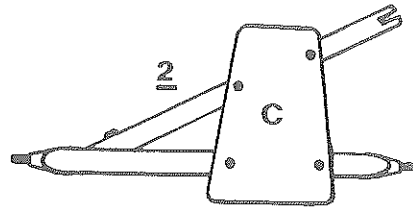
## GENERAL

**READ EACH STEP RIGHT THROUGH BEFORE COMMENCING.** Wax or soap rubbed onto screw threads will make screwing easier.



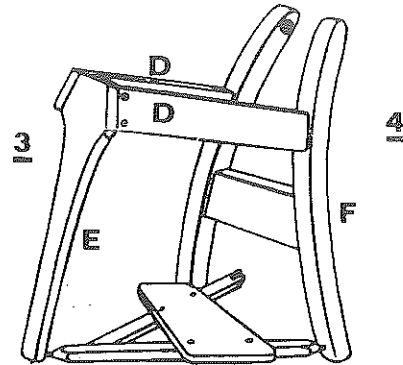
## STEP 1

Treadle rails A and B are screwed together with 1½ inch round head screw. Holes are pre-drilled.



## STEP 2

Treadle board C is now attached with four ½ inch countersunk screws after positioning evenly on treadle rails keeping bottom edge of C parallel to rail B with screws in centre of rails.



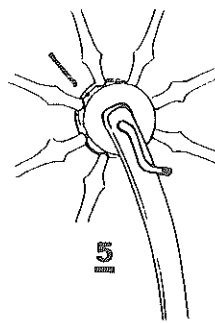
## STEP 3

Keeping the small lead holes in the rails "D" uppermost and the hole at the foot of "E" on the same side as the rails, connect the rails to the leg with four 1½" round head screws. Commence Step 4 before tightening screws home.

## STEP 4

Use a large screwdriver. Take the wheel support legs F (factory assembled) and start four 2½" screws through these legs into the ends of rails D. Before screwing up tight fit the treadle assembly between legs E and F.

## STEP 5

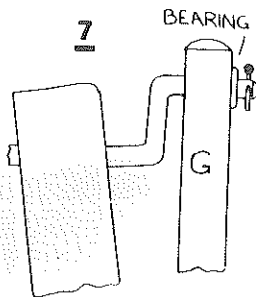


Place the wheel in position between the legs and insert the crank. This has deliberately been made a tight fit in the hub so do not lubricate or ream out the hole. To secure the wheel, first locate the hole in the crank by pushing the nail, supplied in the hardware, through the hub, twisting the crank backwards and forwards until the hole is located. Next tap home the tension pin through the hub and crank, taking care not to damage the spokes. If it is required to remove this pin, file off the point of the nail and punch back out.



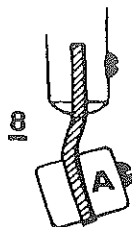
## STEP 6

The small rectangle of leather forms a flexible joint and is held in G with a  $\frac{1}{8}$ " round head screw.



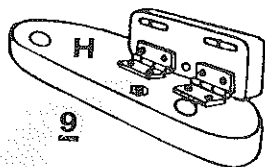
## STEP 7

Fit the connecting rod G to crank keeping bearing to outside. Next insert cotter pin through the hole and bend each leg up around crank with pliers or screwdriver.



## STEP 8

Insert the leather into A and fix with a  $\frac{1}{4}$ " round head screw. Now treadle the Spinning Wheel and check the action.

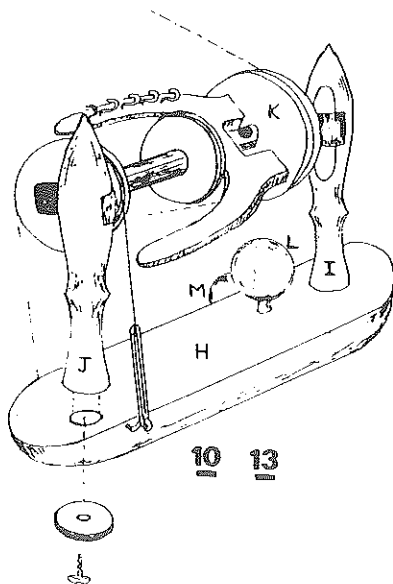


## STEP 9

Use  $\frac{1}{2}$ " countersunk screws to hinge the adjusting board to the horizontal bar H. Lead holes are pre-drilled.

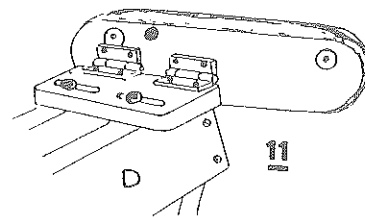
## STEP 10

Flyer uprights I and J are held in the maiden bar H by  $\frac{1}{4}$ " screws and large washers. Upright I has a large hole in the nylon bearing and is clamped tight after ensuring this bearing is at right angles to H. Flyer upright J must twist to allow changing of bobbins. Wax the spigot before inserting and rotate back and forth until it twists easily, but DO NOT lever on the bearing. The clamping washer under J should not be too tight, but can be adjusted if J becomes too loose. Now fit the flyer and bobbin between these uprights.



## STEP 11

Put two 11" screws through the metal washers then through the adjusting board slots and loosely screw onto rails D.



## STEP 12

Fit the driving cord around the wheel and the flyer pulley K and tie with a reef knot. Sight along the cord and slide the horizontal bar until the pulley and wheel are aligned. Hinge back the horizontal bar and tighten the screws through adjusting board.

## STEP 13

Knob L screws into place to tension the driving cord. Do not have too tight. Fix five screw hooks into the flyer and the sixth into the back of H. Fix the screw eye into the front of H. All holes are pre-drilled. Fit tension knob M in place and thread nylon through screw eye, over bobbin and tie to spring or rubber band. Make sure that there is sufficient length of nylon to allow all tension to be released if required. Do not wax or lubricate the spigot of M.

## LAZY KATE

The two drilled lengths of dowel are inserted and glued into the base. Make sure the holes line up by inserting the wires.

## THREADER HOOK

Thread the tape through the eye of the hook and tie into a loop. Hang this over tension knob M for easy location.

## ASHFORD LABEL

Attach this 2" or 3" below the top of leg E.

## POINTS ON MAINTAINING YOUR SPINNING WHEEL

**ALWAYS REMEMBER THAT FREQUENT OILING IS ESSENTIAL FOR A SMOOTH-RUNNING SPINNING WHEEL.**

### OILING or GRAPHITE LUBRICATING POINTS

Two bearings in uprights holding wheel.  
Bearing in top of Pitman Rod.  
Metal projections on ends of treadle rail.  
Nylon Bearings on Flyer uprights.  
A good quantity of oil inside each Bobbin.

**REMEMBER TO OCCASIONALLY CHECK THE SCREWS ON ALL PARTS OF THE SPINNING WHEEL FOR TIGHTNESS.**

### REPLACEMENT PARTS

**BROKEN RUBBER TENSION BAND** — Replace with a heavy duty rubber band or small coil spring.

**REPLACEMENT DRIVING BAND**—A cord of approximately the same dimensions is available from local sources.

**LEATHER JOINT ON PITMAN ROD** — Procurable from local saddlery or shoemaker.

**LOST THREADER HOOK**—A piece of fine hard wire makes a suitable substitute.

**WORN HOOKS ON FLYER**—Replace with steel or brass screw hooks (same size) available from local hardware.

**WORN ORIFICE ON FLYER SHAFT**—Send to us for new Flyer shaft. When received, remove shaft by gently tapping on the narrow end of shaft to remove from Flyer. Replace new shaft by gently tapping in from opposite end. Line up orifice as in previous position.

**BEARINGS FOR FLYER UPRIGHTS**—When ordering please state whether large or small hole bearing is required.

## WASHING THE YARN

Soak yarn in cold water—anything from 1 to 12 hours. (The soiled water makes good garden fertiliser!). Always handle wool lightly, avoiding rubbing, twisting, and sudden change of temperature. Gentle squeezing prevents felting and shrinkage. It is a matter of choice whether you use detergents, soap flakes, blanket wash or additional water softeners, but rinse the skeins thoroughly until the water runs clear. If the wool is left with a film of soap, it becomes dull in appearance. After shaking the strands free, thread skein with a piece of cloth and dry in an airy, shady place. An eight ounce weight attached to the skein will take out kinks during drying, but should be removed before the skein is completely dry.

**Mini Wash**—This is simply a cold water soak to remove superficial dirt and some of the sheep smell. It is excellent for garments to be worn in cold and rugged conditions. All hand-washed homespuns retain some natural lanoline which "turns" both wind and rain.

## HOME DYEING IS FASCINATING

It is also full of surprises, so keep a notebook to record results. There's no end to experimenting with vegetable dyes. They are soft and pretty and the muted colours of ancient tartans are the best examples. Chemical dyes can be used, but they don't match the excitement and anticipation of watching what's bubbling in the dyebath. For best results it takes weight for weight of vegetable matter and wool. Every journey into the country or garden is full of possibilities for the home dyer. Twigs, bark, flowers, berries, roots, lichens, moss should be gathered for experiments. Plants gathered at different times can produce different effects depending on locale and climate. Always dye sufficient quantity of wool at one time as it is difficult to get the exact shade again.

**WOOL FOR DYEING MUST BE VERY CLEAN.**  
Wash and rinse repeatedly.

## MORDANTS

Wool is naturally water repellent and therefore a "link" is required to fix the dye to the wool. This link is called a mordant. Wool is usually mordanted before dyeing, but if you are keen to see immediate results, it can be added to the dyebath.

Common mordants are alum, chrome, iron sulphate, copper sulphate, tin crystals, cream of tartar, and tannic acid to name a few. They are used in varying quantities for different effects, but space permits only the mention of alum here.

**ALUM** the mordant. Dissolve 3-4ozs alum in boiling water, strain through nylon or muslin and add to dye pot containing sufficient water to comfortably cover one pound of yarn. For small lots, use 1 teaspoon alum for a one oz. skein, in suitable sized container. Place only damp wool in dyepot. Simmer gently for twenty to thirty minutes, keeping lid on and prodding the wool gently from time to time. Let cool in water, squeeze dry and store in cotton bag in cupboard for 2-3 days before dyeing.

**THE DYE POT**—Should be big enough to accommodate easily wool and liquor. The ideal is stainless steel, enamel or galvanised iron. Some metals such as aluminium, copper, iron and brass tend to make colours a shade deeper. There are times when this does not matter. A lid is necessary for best results. Rods for prodding and lifting the skeins can be glass or dowelling. Replace deep-dyed dowels—they can affect light colours.

## EXTRACTING THE DYE—

Put the plant material into cold water and bring to the boil. Boiling time depends on the type of plant and the depth of colour required. Hard fibres such as twigs, bark, etc., require up to three hours, but dye from leaves and flowers may take less than half the time. Colours tend to darken with prolonged boiling. Finally, strain the dye liquor through several layers of nylon, store in bottles away from light, and label carefully. Some liquors can be poisonous. Also when boiling, some plants give off toxins, so work in a well ventilated room.

## DYEING THE WOOL—

Bring liquor to boil and drop in the loosely tied, clean and mordanted skeins. Simmer gently until sufficient colour is absorbed. Don't forget the skeins will dry out lighter colours. Prod wool gently and keep lid on dye pot. Lift from dye and rinse until water runs clear. Thread on cord and hang to dry in a warm, windy place. Separate strands.

For lots of quick results put small skeins which have been treated with different mordants into the same dye pot.

And for quick, quick results, put mordant, plant material (in muslin bag), and clean wet skeins all in together. This of course is only for experimental purposes. By tying skeins tightly and/or overcrowding dye pot, you can get quite pleasant random effects. Try dyeing natural coloured fleeces, especially if a light and dark yarn are plied together.

## USEFUL PLANT MATERIALS—

Here is a list of plants and the colours you could obtain, using alum: Dandelion, Ragwort (flowers), Silver Birch leaves, Onion skins, Barberry (stems)—Yellows; Berries from Black Nightshade, Elderberry, Privet, Grape Hyacinth heads—Blues. Lily of the Valley leaves, Nettle (leaves & stalk), Blackberry shoots—Greens. Elderberries, Blackboy Peach fruit, Dandelion roots—Purples. Silver Birch bark, Tanea-kaha bark, Silver Dollar gum leaves, common Sorrel roots, Cochineal—Reds. Elderberry leaves, Green Walnut Husks, Bluegum bark, Flax flowers—Browns. Lichens in many varieties give many colours. As a rule they have a "built-in" mordant and wool needs little preparation for this type of dyeing.

What has been written here about vegetable dyeing should be regarded as guide lines only. For an exciting experience, invite spinners to a Dyeing Day and exchange ideas and results.

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## ASHFORD SPINNING WHEEL HISTORY—

During World War II, the Ashford spinning wheel was developed to aid women in their desire to make woollen wear for soldiers and sailors. The high-country farmer and musterer has always appreciated the hardwearing qualities of homespuns. When the late Dudley B. Ashford patented his "flyer unit" the Wool Trade were astonished to think someone could invent anything to add to the long established spinning wheel. The Ashford patent flyer simplified the bobbin-change. By adjusting the rear "maiden" the bobbin was on and off in double quick time.

The spinning wheels were made in the factory at Rakaia and posted all over New Zealand. Because the wheels were produced in the form of a kit-set, they saved man hours in the factory, and were marketed at an extremely low price. At the end of the war most spinners retired, but a small hard core kept the craft alive, and it is mostly due to their efforts (coupled with an awareness of the quality of wool) that has launched homespinning on its fascinating return to popularity.

In New Zealand today there are thousands of homespinners and a national council has been set up to advise and promote this craft. The quality of homespuns has gone from strength to strength, and tourists are delighted not only to buy garments, but spinning wheels as well.

Today's Ashford spinning wheel has benefited by modern manufacturing methods. It can still be obtained as a kitset, and because it is a spinning wheel within the means of the average person, this perhaps more than anything has helped spinning to become a household word.

More than 110,000 Ashford spinning wheels are in current use.