



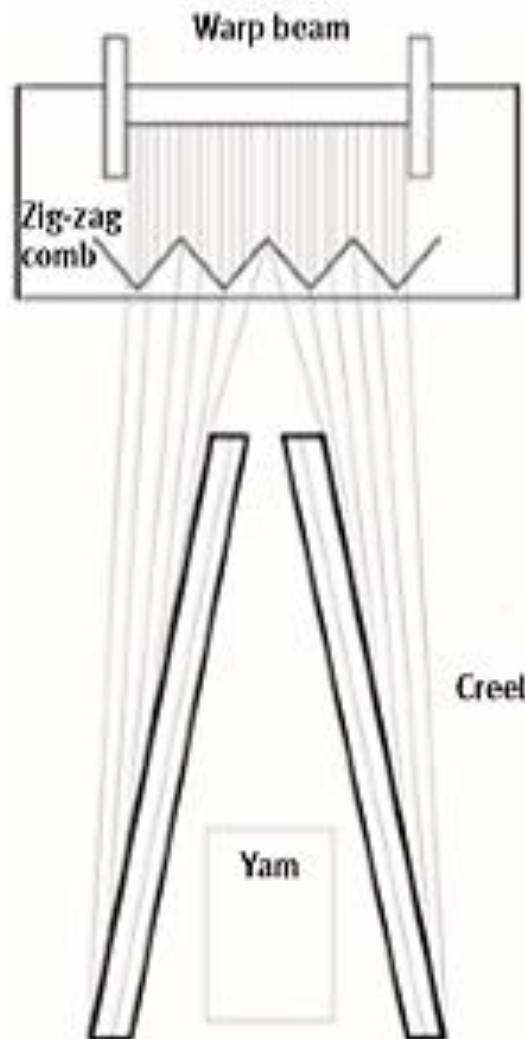
Types of Warping

- **High Speed Warping**
 - *Direct Warping*
- **Sectional Warping**
 - *Drum/Indirect Warping/Pattern*
- **Ball Warping**
 - *Used for Denim Fabrics*
- **Draw Warping**
 - *Heat Set*
 - *Used for thermoplastic yarns*

High speed (Direct) Warping

- Yarns are withdrawn from the single-end yarn packages on the creel and directly wound on a beam
- Suitable for grey or mono-colored warps (less than 15%) that require sizing
- Used for longer runs of fabric
- High production as compared to other types of warping
- Used for all conventional, regenerated and filament yarns.
- V shaped creel is used (Upto 1224)

High speed (Direct) Warping



Sectional (Indirect) Warping

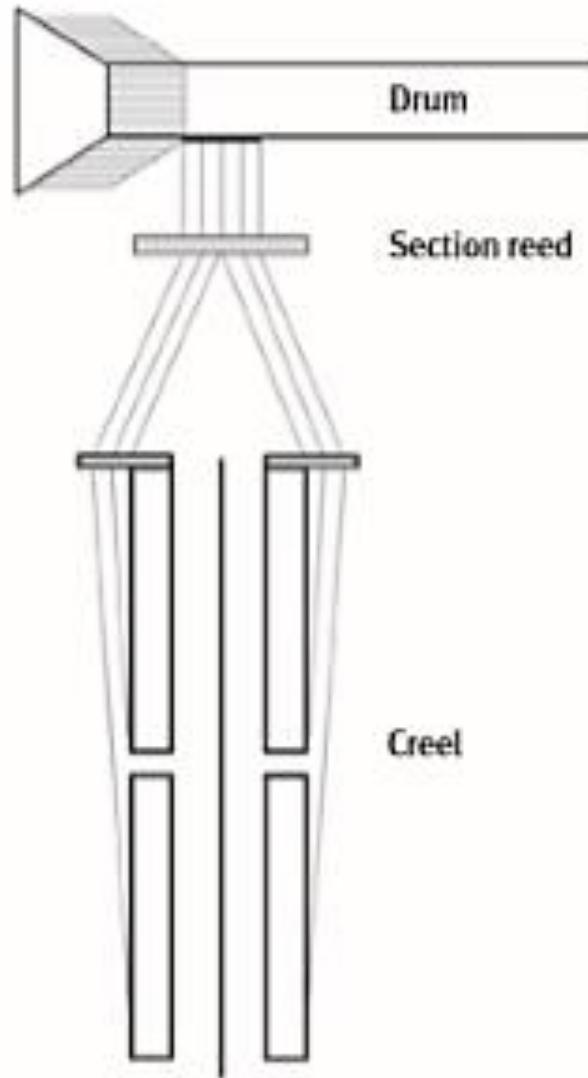
- A two stage machine used to collect required number of ends of different type, nature and colours on the beams.
- It is used when colour threads are more than 15%.
- Process of winding yarn on tapered or section beam then Warper / weaver beam produced

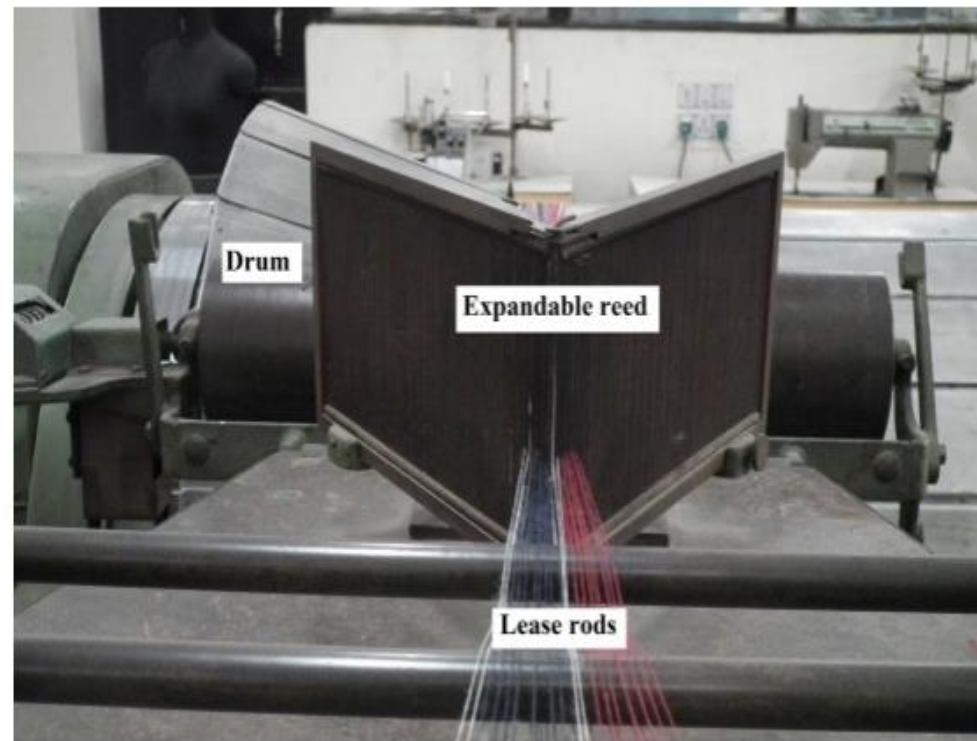
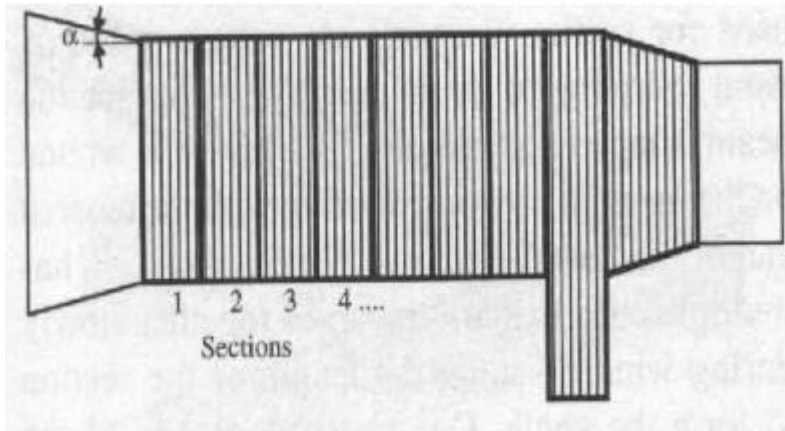
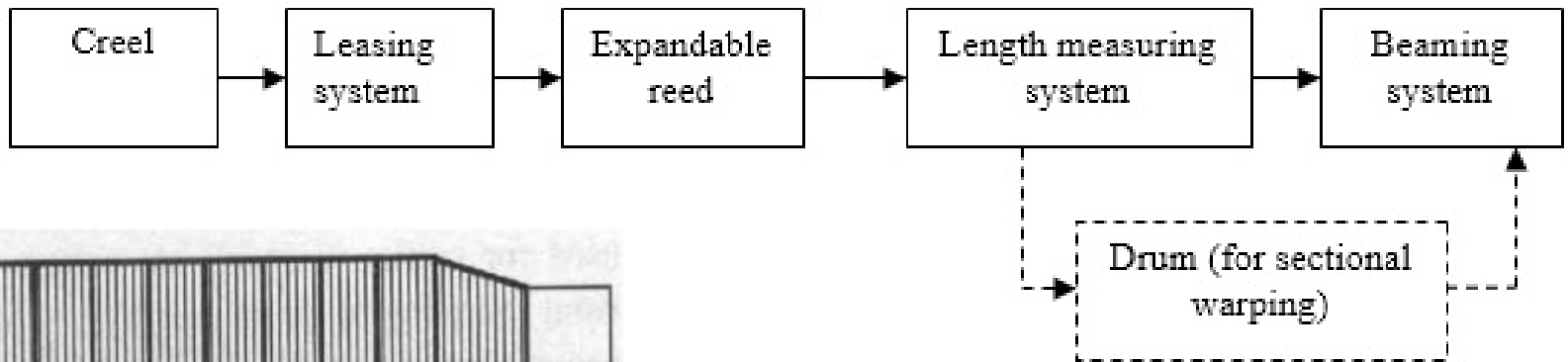


Sectional (Indirect) Warping

- entire width of the warping drum is not developed simultaneously. It is developed section by section
- Also known as Pattern, band or drum warping
- Complex colored patterns
- Short runs (500-10000)
- H type creel is used (600-650 ends)

Sectional (Indirect) Warping





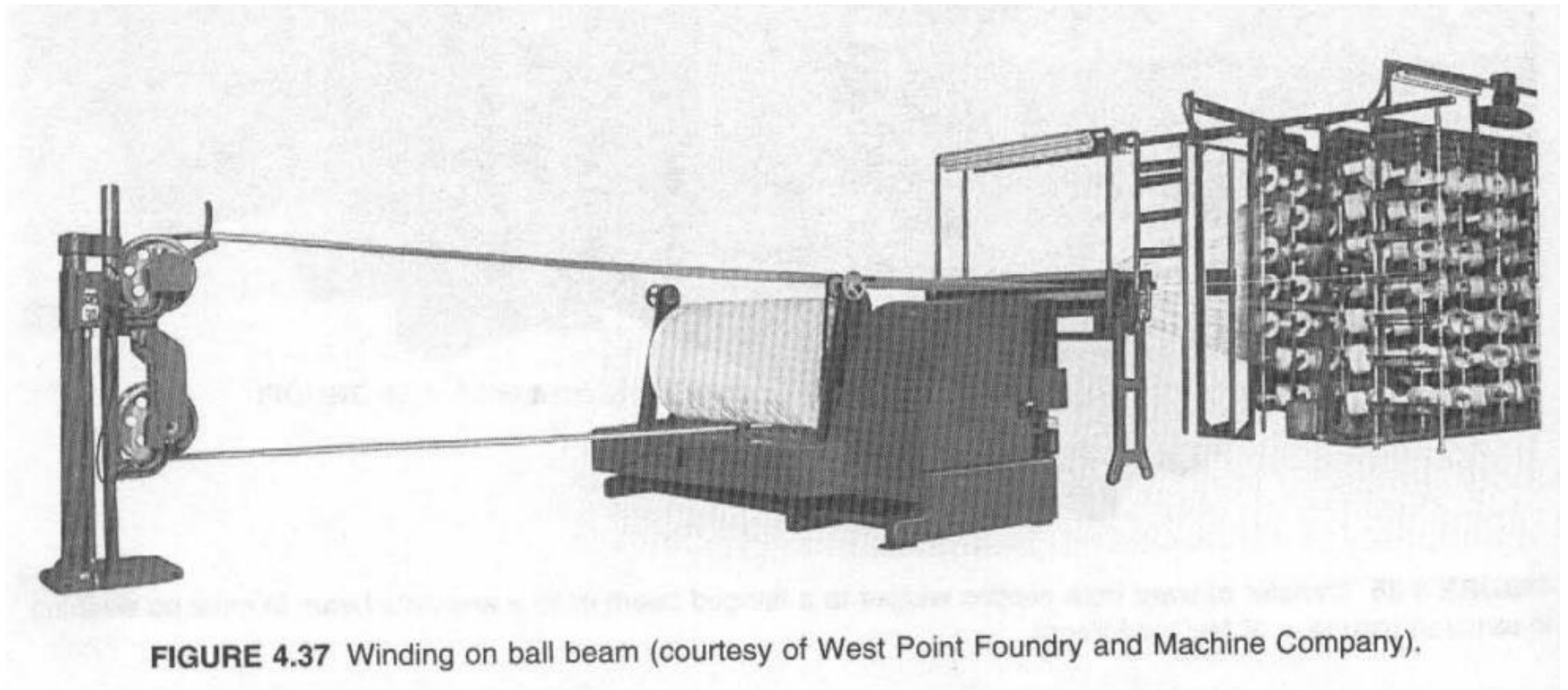
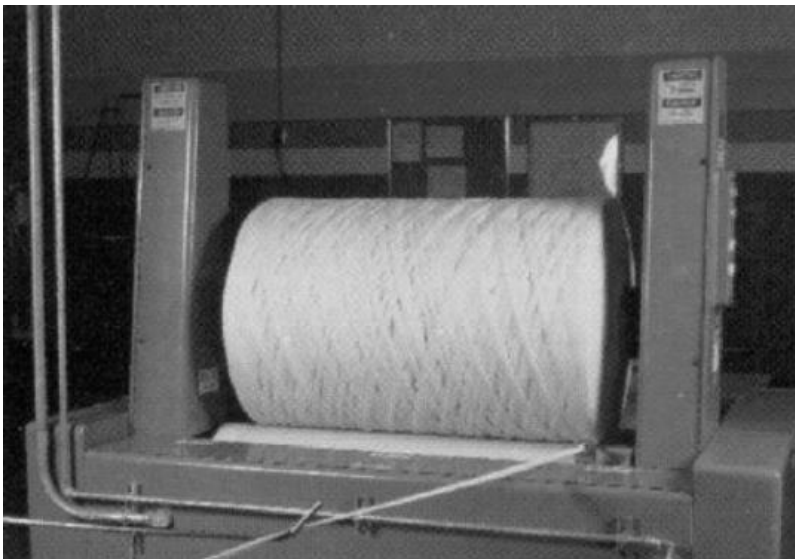


Difference between Direct and Sectional Warping

Beam warping	Sectional warping
Used for high volume production	Used for small volume and customised production (stripes and specialised yarns)
One step process	Two step process
High creel capacity is required	Low creel capacity is sufficient
Comparatively less expensive	Comparatively more expensive
Beaming speed is high	Beaming speed is low
More common	Less common

Ball warping

- Ball warping is the process of winding warp in loose rope form onto balls.
 - *Balls are cross wound packages like cheese but warp is form of rope.*
 - *Ball is wounded on special wooden core called "log".*
 - *Balls are specially used for Indigo-dyeing for denim fabrics.*
 - *After production of balls rope dyeing is done.*
 - *Re-beaming provides with conversion of rope dyed warp yarn, stored in cans, into Warper's beams*
 - *Used only where mono colour dyeing of warp is required*





Draw Warping

- Combining the drawing of filament yarns with heat setting and warping processes
- Achieve uniform stretching and heating for improved dye uniformity, end to end
- Used for weaving of thermoplastic yarns

Draw Warping Textile Fibers

