



CRC

for

Premium

Quality

Wool

Worsted Card Features

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Peter Auer, The University of New South Wales.



General Card Layout

- **Primary**

- **Forepart**

- Lickerin roller (takerin)
 - Breast cylinder

- **Swift / Worker / Stripper**

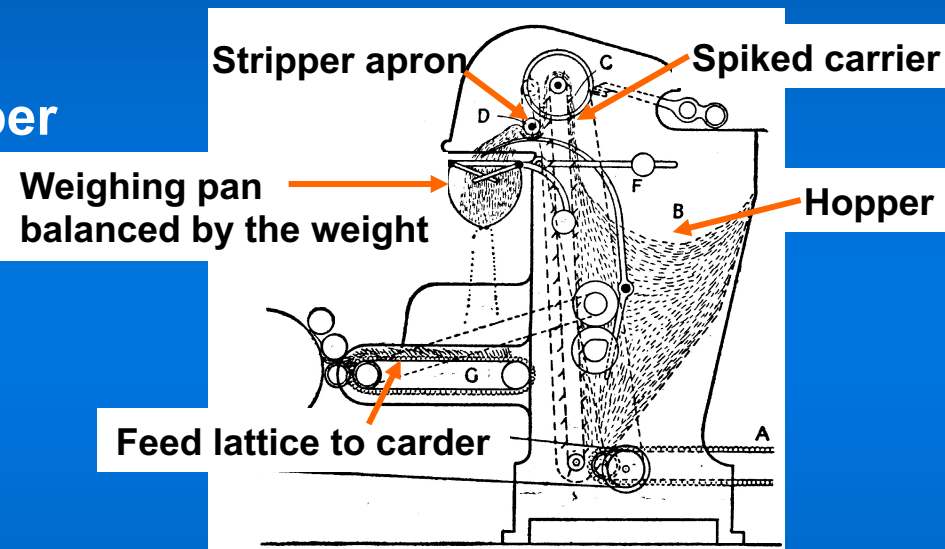
- carding unit

- **Doffer**

- doffer comb
 - condensing funnel

- **Secondary**

- **Feed Section**



- **VM Removal**

- Morel Unit, Burr Beaters

- **Sliver Take-up**

- cans, direct feed

Peter Auer

Source of illustration of Branwell Automatic Feed
Murphy, W. S., The Textile Industries

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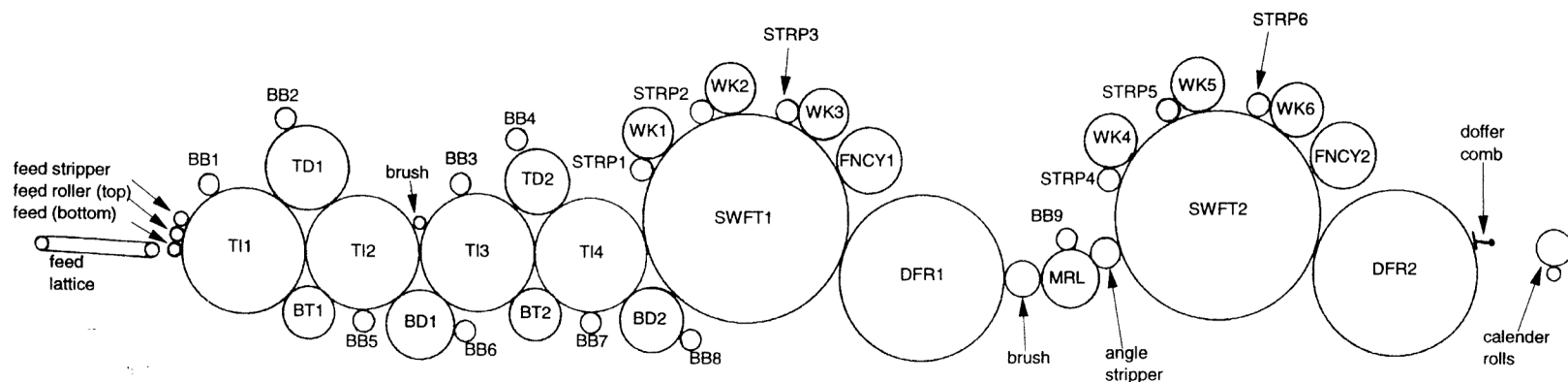
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Bradford-type Worsted Card



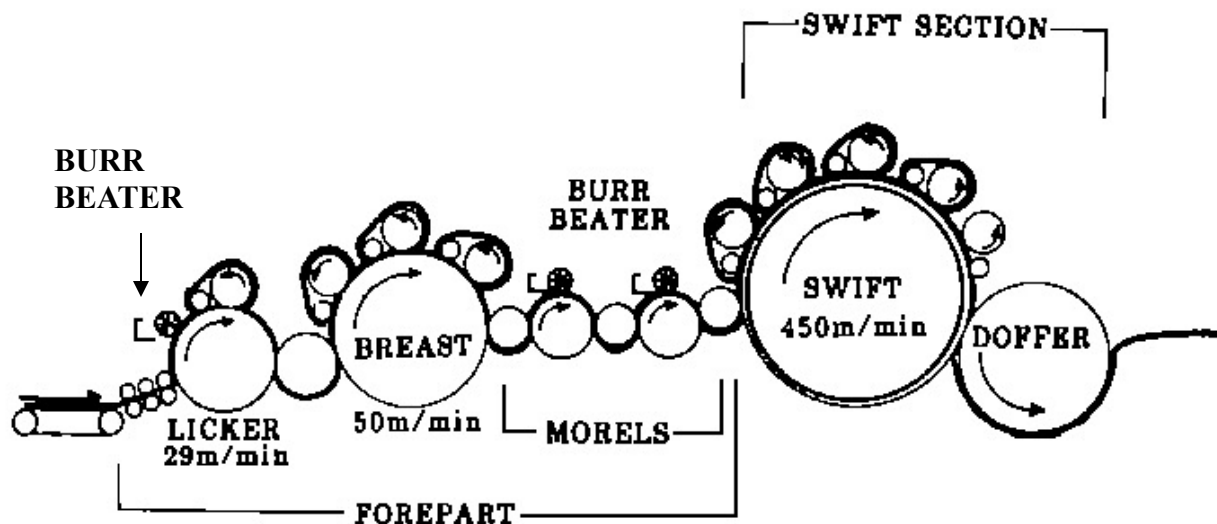
Legend:

BB burr beater
TI taker-in
TD top divider
BT bottom tightener
BD bottom divider
MRL morel roller

STRP stripper
WK worker
FNCY fancy
SWFT swift
DFR doffer



Continental-type Worsted Card



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Card Variables

- **card clothing**
 - type of pins
- **surface clearance**
 - how close are the working surfaces?
 - card settings
- **surface speeds**
 - how fast are those surfaces moving past each other?
- **production rate**
 - how much fibre is feeding through the card?

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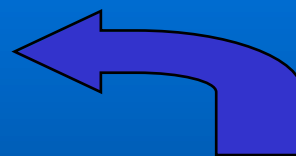
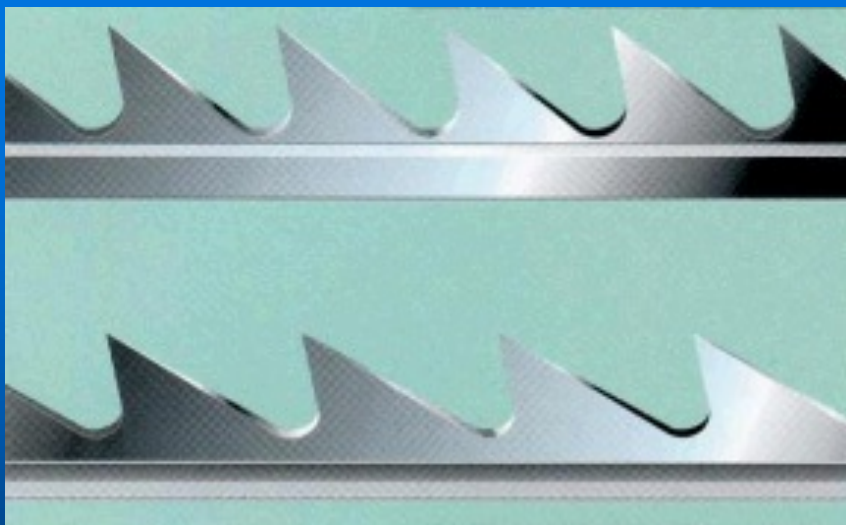
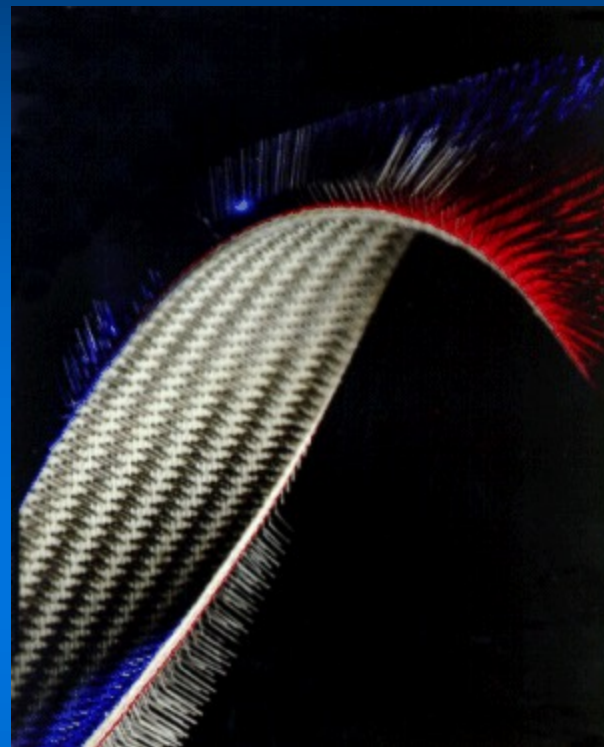
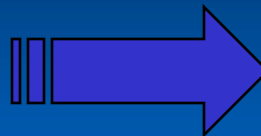
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Card Clothing

Flexible Fillet wire



Short metallic wire

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Card Performance

- **Fibre Breakage**

- optimal is zero breakage
- ~40% of fibres are broken

- **Fibre Alignment**

- optimal is ALL straight and parallel
- gilling / combing required

- **Neps**

- small fibre conglomerates
- carding removes and generates

- **Trash**

- small level of residue
- mostly removed in combing

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Card Production

- amount of fibre passing through the card
 - Fresh Fibre Density (FFD)
 - expressed as kg / hr / m
 - influenced by
 - the fibre capacity of cylinder
 - Total Fibre Density (TFD)
 - the width of the card
 - the speed of the card
 - swift speed

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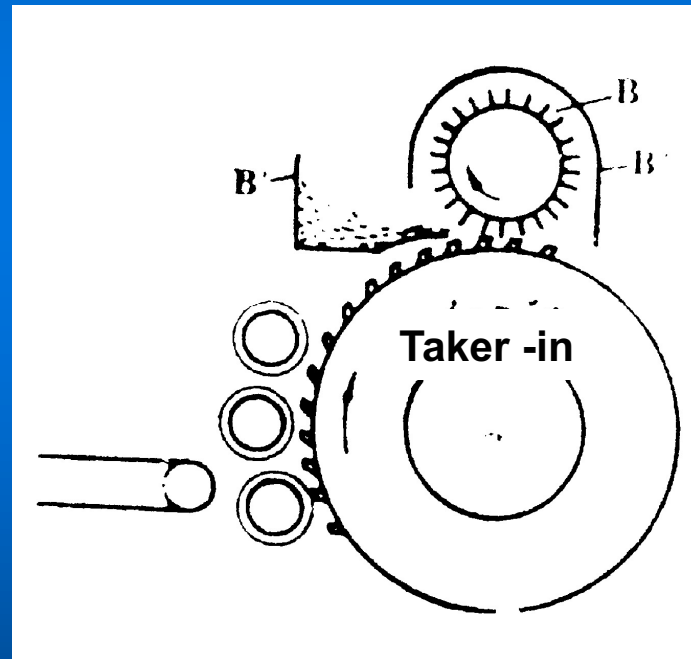
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VM Removal

- **Burr Beaters**
 - high speed, across width of card
 - twigs, hard-heads
 - “golf ball” effect

- **Morel Wire**
 - special profile card wire
 - Lickerin
 - Morel Unit





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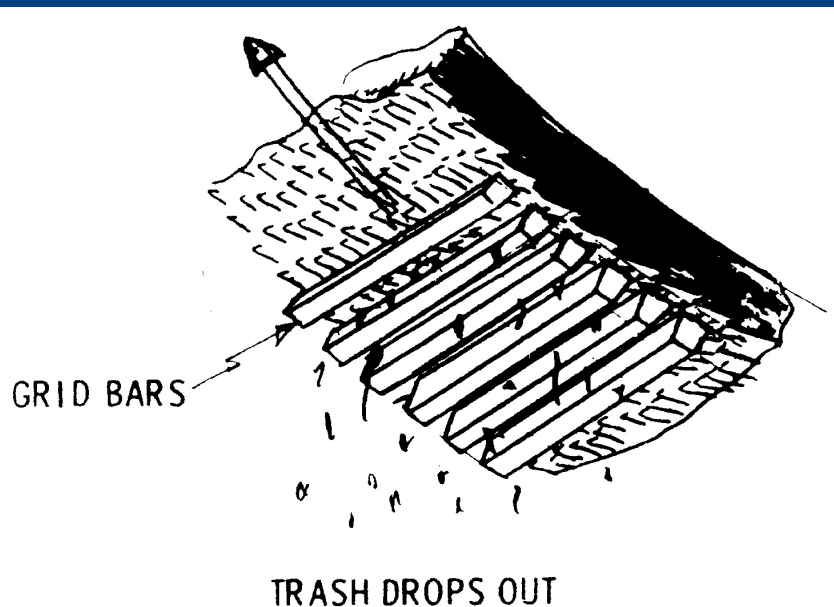
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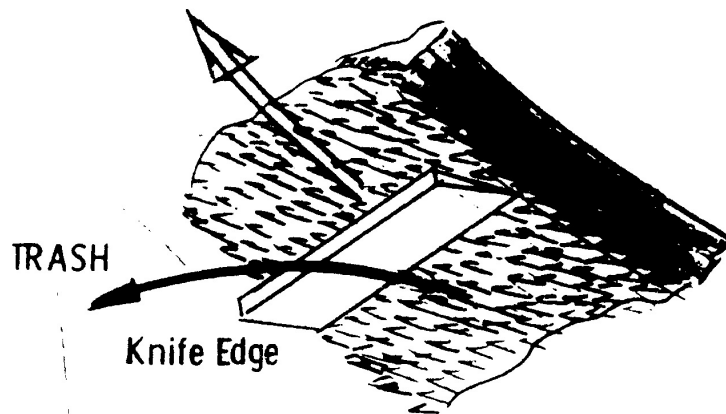
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VM Removal

- Grid bars



- Knife edge





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Doffing

- carding action
 - main source of trailing hooks
- oscillating doffer comb
- card sliver formed

