

# TABLE OF CONTENTS.

## COMBING.

	PAGE.
Description of the Process.....	1
<b>SLIVER LAP MACHINE</b> .....	3
Full Lap Stop Motion .....	6
Sliver Stop Motion.....	8
Calculations.....	8
Draft .....	8
Production .....	9
To Find the Number of Spools Filled per Day per Head .....	10
<b>RIBBON LAP MACHINE</b> .....	11
Rule for Setting Drawing Rolls.....	14
Calculations.....	14
Draft .....	14
Production .....	16
To find the Number of Spools Filled per Day per Head .....	16
<b>COMBING</b> .....	17
Description of the Course of Cotton Through the Machine.....	19
General Description of the Working Parts of the Machine.....	19
Feeding.....	21
Nipping.....	24
Combing.....	27
Detaching and Attaching.....	29
Method of Actuating the Top Comb .....	35
A Synopsis of the Operations During Combing .....	36
Delivering.....	38
Cleaning of the Cylinder Comb.....	41
Duplex Combers.....	42
Notes on Combing.....	43
Size of Flutes.....	44
Curling of the Fibres.....	45
Regulation of Waste Made .....	45
Settings and Timings.....	48
Driving of the Comber.....	52
Calculations.....	53
Draft .....	53
Production .....	55

	PAGE.
The Alsatian Comber .....	56
Extraction of Noils and Impurities from the Lap .....	60
The Mason-Monforts' Comber .....	75
The Nasmith Comber .....	80
The Nipper Frame and Plates .....	80
The Feed Roller .....	81
The Top Comb .....	82
The Detaching Mechanism .....	83
The Operation of the Machine .....	83

### DRAWING.

Description of the Process .....	85
Stop Motions .....	93
Back Stop Motion .....	94
The Front Stop Motion .....	94
The Full Can Stop Motion .....	95
Electric Stop Motions .....	98
Drawing Rolls .....	99
The Bottom Rolls .....	100
The Top Rolls .....	101
Leather Covered Top Rolls .....	102
Varnishing and the Care of Rolls .....	106
Combination of Rigid and Yielding Surface Rolls .....	109
Metallic Drawing Rolls .....	110
Setting Drawing Rolls .....	113
Weighting of Top Rolls .....	117
Clearers .....	123
Calculations .....	126
The Mason Drawing Frame .....	130
The Saco and Pettee Drawing Frame .....	135
The Howard and Bullough Drawing Frame .....	140
The Whitin Drawing Frame .....	144
The Dobson & Barlow Drawing Frame .....	149

### ROLLER COVERING.

Description of the Process .....	152
Roller Cloth .....	152
Roller Leather .....	153
Covering Rollers with Cloth .....	156
Cutting the Leather .....	157
Equalizing Skins by Grinding .....	158
Splicing or Bevelling of the Leather .....	159

	PAGE.
Piecing the Leathers.....	160
Drawing-on the Cots.....	161
Ending the Rollers.....	162
Finishing the Rollers.....	163
Truing and Varnishing Rollers.....	163
Testing Rollers.....	164
Hand Roller Covering.....	165

## FLY FRAMES.

Description of the Process.....	167
The Slubber.....	168
The Intermediate Frame.....	168
The Roving Frame.....	169
The Jack or Fine Frame.....	169
Object of Fly Frames.....	169
The Creel.....	173
Points on the Construction and Operation of Fly Frames.....	176
Standard Sizes of Fly Frames.....	178
Drafting Rolls.....	178
Cap-bars.....	181
Setting the Rolls.....	182
Weighting the Rolls.....	183
Self-weighted Top Rolls.....	185
Draft.....	186
Roll Traverse Motions.....	187
Twisting the Roving.....	191
The Spindle.....	194
Flyers.....	195
The Bolster.....	199
Winding the Roving.....	199
Flyer-Lead.....	200
Bobbin-Lead.....	200
Cones.....	206
Differential Motion.....	210
Holdsworth's Differential.....	217
Daly's Differential.....	223
Howard & Bullough's Differential.....	228
Gearing Calculations of Howard & Bullough's Fly Frame.....	231
Curtis & Rhodes' Differential.....	236
Gearing Calculations of Platt Brothers & Co's Fly Frame.....	238
Dobson & Barlow's Differential.....	242
Builder Motion.....	244
The Horse Head.....	251
Tension Gear.....	254

	PAGE.
Tension Regulating Device .....	255
Lifting and Reversing Motion .....	256
Stop Motions .....	258
Hank Clock .....	261
Doffing .....	262
Notes .....	263
Worn Rolls .....	263
Bad and Uneven Roving .....	264
Long and Bad Piecings are a Distinct Evil .....	265
Mending Broken Ends .....	265
Empty and Full Bobbins .....	265
Speeds of Spindles .....	267
Revolutions of Spindle and Pulley per Minute .....	268
Spindles per Roll .....	268
Weight of Cotton on Bobbin, Expressed in Ounces .....	269
Management of Bobbins on Creel .....	270
Clean Machines Regularly .....	270
Gears .....	270
Oiling .....	271
Calculations .....	273
The Grading of Slubbing and Roving .....	273
A Constant Number .....	277
Draft .....	278
Twist in Roving .....	281
Cone Gear .....	283
The Lay Gear .....	284
The Tension Gear .....	285
Production .....	287
Calculating Production from Speed of Machine .....	287
To Calculate by Timing One Set Produced .....	289
To Calculate Production by the Hank Clock .....	289
Calculating Production from a Constant Number .....	290
A Short Method for Calculating Production .....	291
Changing the Twist .....	291
Regulating Production .....	292
Average Hank .....	292

