#### 677.028 22 TEX Pt.I

### CONTENTS

### Section I.

The making of a top. General descriptions of systems of worsted drawing, and Their uses. Open drawing . A typical set of machines. Variations from standard, And the reasons for these variations. Wool quality and its effect on draft. Top Sliver weights. The use of doublings. Top reduction calculations variations in The application of draft . equal , progressive and random drafts. The reasons For the number of operations used in drawing 1 Section II. Gilling . types of giling machines , the function of a gill box. Gill box gearing Calculations for the back and front roller and the faller drives the function of the Back draft. Total draft. Leathers . The faller - moving mechanism - screws, cams,Saddles and conductors . Fibre control in gilling . back ratch . front ratch the Importance of the front nip setting creels . stop motion. Siliver guides. Oiling Motions . forms of delivery 27 Section IIA Modifications to the ordinary gill box. The intersecting gill box. The O. P. S. gill Box. Front roller assembles . the pin drafter – the holdsworth gill reducer. 49 Comparison of large and small front rollers. Modern gill box requirements Section III The spindle gill box. Twist calculations . the function of the flyer. Winding on Washer control . lifter traversing motion. Spindle assembly . the amount of twist Use. Creels. 60 Section IV Drawing boxes. General description . the draft and twist gearing – calculations. Spindle assemblies – the ordinary unsupported spindle – the ball – bearing Steadied spindle - the ring spindle - advantages and disadvantages. Creels . Back, front and carrier roller assembly. Ratch setting . the function of the carrier Rollers - positions - speeds - drives. Requirements in drafting . the imposition Of higher drafts. High drafting units . double zone drafting 73 Section V. Cone drawing difference between open and cone machines. flyer lead and bobbin lead. The differential gear. The cone drive. Lifter requirements and drive. Lifter traverse - the Rocker motion. Cone blet movement . calculations for bobbin and lifter speed changes . Calculation for speed of bobbin when empty and full. Twist gauge point. Stop motions. Advantages and disadvantages of cone drawing machines 109 Section VI

French drawing . the difference between French and English drawn materials . A typical set of machines. Variations from standard . draft . the reduction of top to rove . the melangeur gill box . function of a french draw box. Creels . drafting unit assembly. Ratch setting . porcupine roller – setting – pinning – speed – attention . fibre control I drafting . front roller assemblies . rubbing motion . gearing and calculations for draft, carrier lead and porcupine retardation. Other speed adjustments 135

# Section VII

Anglo – continental drawing . reasons for this development . A typical set of machines and Variations from it. Top reduction Doublings and draft. The patent porcupine . revolving Funnels. Ratch adjustments . draft calculations . carrier and porcupine speed calculations 160

# Section VIII

Developments in drawing . cost reduction in drawing . possibilities. Reduction in number of Operatives. Increasing production per man hour. Single – end roving . reductions in the Number of operations . the effect of using a reduced number of doublings . The extension Of pin control . reduction of operations in both the English and French systems. The American System. Its development from cotton machinery to the present mixed layout. High draft Rovers Mixture requirements . effect of a high draft unit on the spinning frame on the number of Drawing stages 17

# Section IX

Drawing production. Factors to consider . calculated output in sets of french , English and Anglo – continental drawing . actual efficiency as a percentage of the calculated . formulation Of machines needed in a set. 196

### Section X

The value of stop motions . the full – bobbin stop motion. Balancing up for sliver weight .The single – end detector motion. The faller lap stop motion. The front roller lap stop motion.Faults produced in drawing . long – term irregularity .slubs raper autoleveller .208