COTTON MACHINERY SKETCHES

TELEGRAMS—
"DOBSONS, BOLTON."

NATIONAL TELEPHONE—
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A.B.C., WESTERN,
BENTLEY, AND LIEBER CODES.

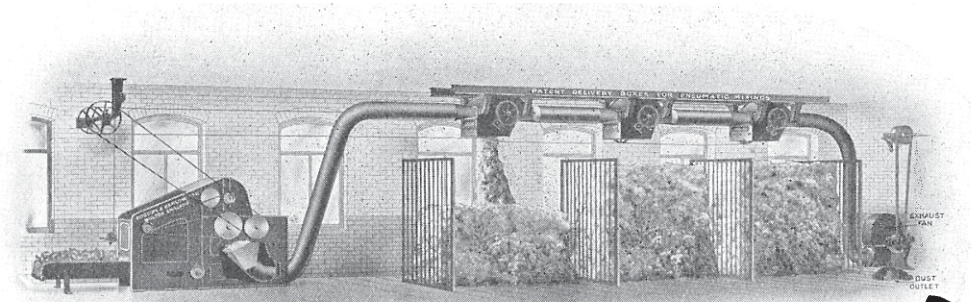
DOBSON & BARLOW LTD.,

BOLTON, ENGLAND.

ENGINEERING EMPLOYERS' FEDERATION 1896

NATIONAL SCHEME FOR DISABLED MEN

ESTABLISHED 1790.



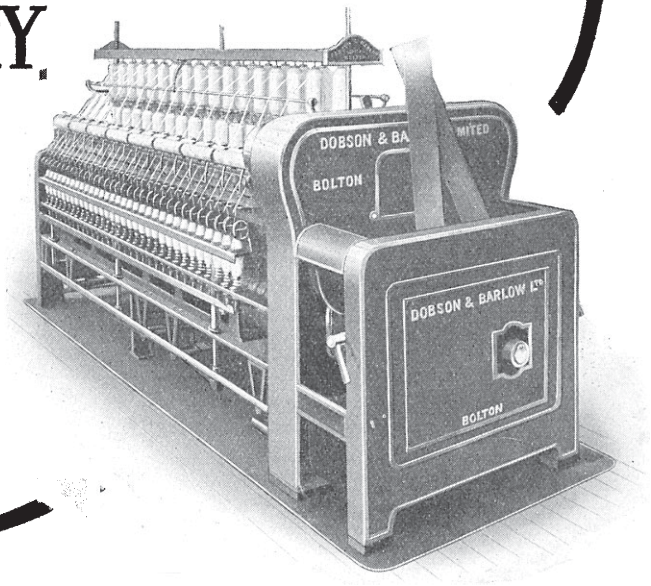
Patent Pneumatic Delivery Arrangement.

COTTON SPINNING MACHINERY

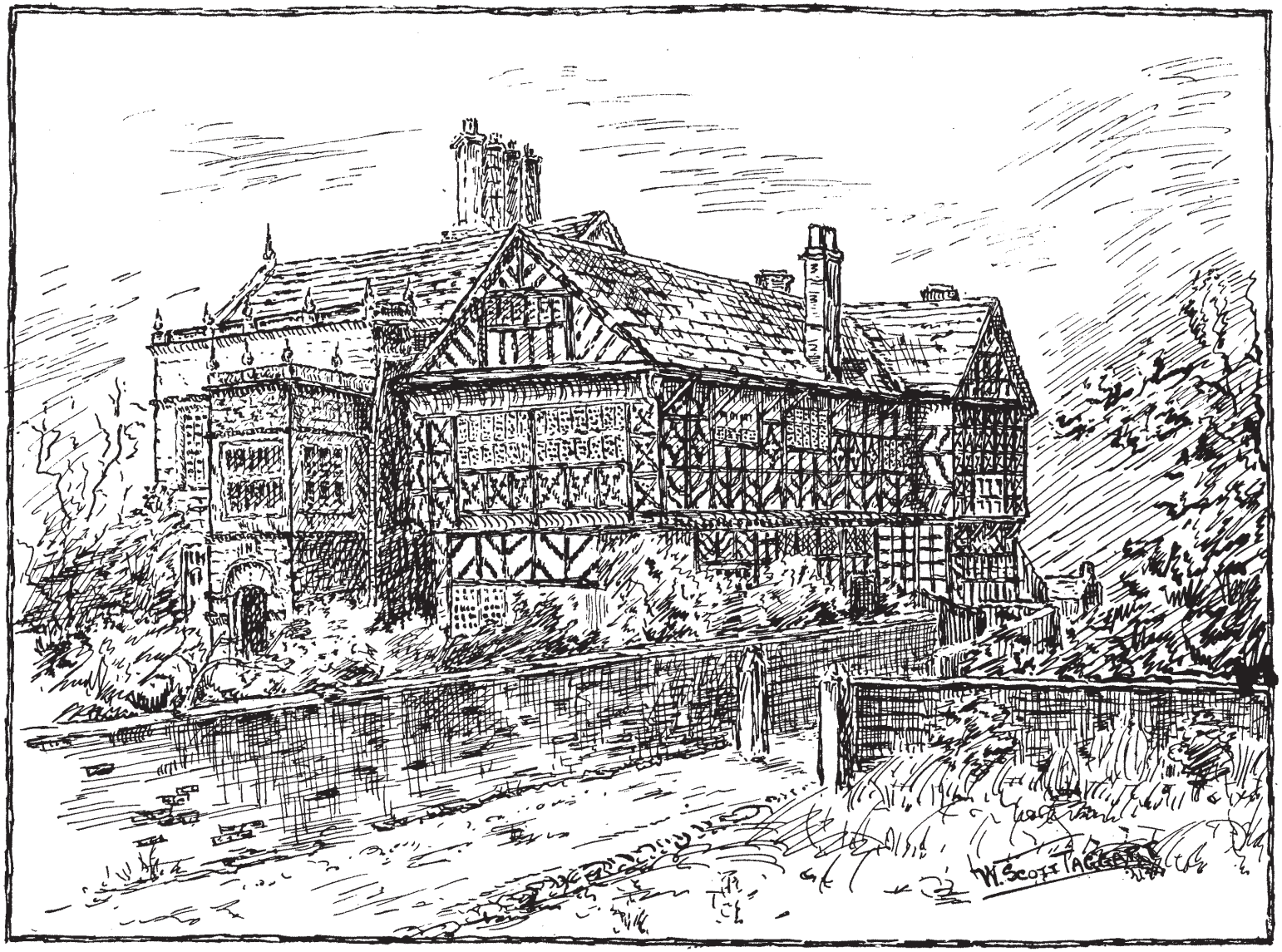
for all processes.

FROM BALE TO FINISHED YARN

of all counts.



Ring Spinning Frame,
(with Birkenhead Creel).



HALL-ITH-WOOD, BOLTON.

Where Crompton made his spinning mule.

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COTTON MACHINERY SKETCHES

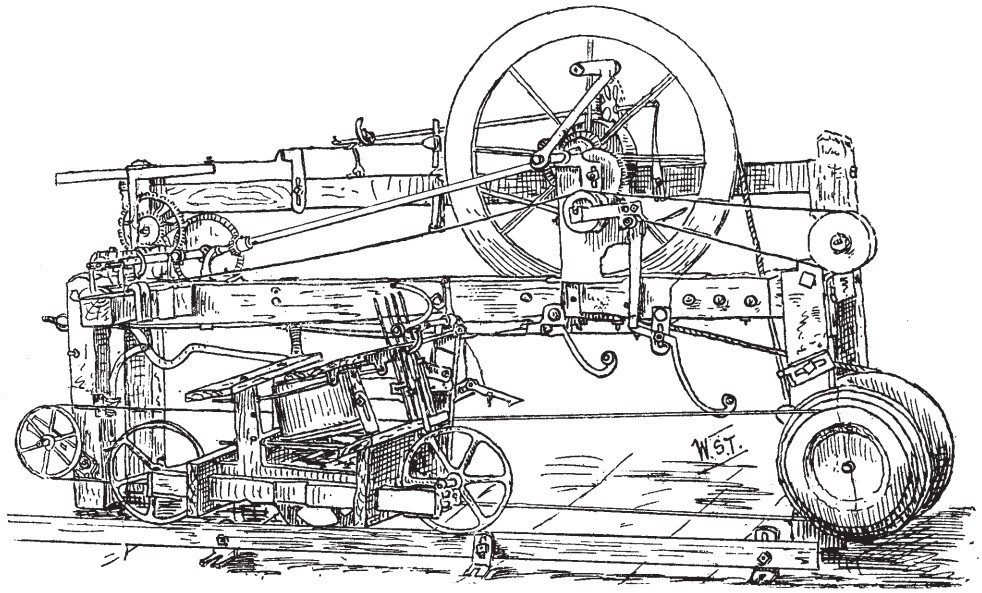
A BOOK OF ILLUSTRATIONS OF ALL TYPES OF COTTON MACHINERY AND TO ACCOMPANY THE AUTHOR'S BOOK ON "MILL MANAGEMENT"

BY

WILLIAM SCOTT TAGGART

M.I.MECH.E.

LATE EXAMINER TO THE CITY AND GUILDS OF LONDON INSTITUTE
ASSESSOR FOR COTTON SPINNING AND WEAVING TO THE WEST RIDING OF YORKSHIRE
AUTHOR OF
"COTTON SPINNING," VOLS. I., II. AND III.; "COTTON SPINNING CALCULATIONS,"
"TEXTILE MECHANICS," "COTTON MILL MANAGEMENT," ETC.



MACMILLAN AND CO., LIMITED
ST. MARTIN'S STREET, LONDON
1923

First Edition 1903.
Second Edition 1911.
Third Edition 1923.

PRINTED IN GREAT BRITAIN

PREFACE

THESE drawings are taken from the three volumes of the Author's book on *Cotton Spinning;* full explanations of them will be found in these books for those wishing to become thoroughly acquainted with the subject.

It is well known that teachers very seldom teach or lecture direct from text-books; they use drawings, and give explanations from them adapted to the degree of knowledge the students may possess on the subject; such explanation may be, therefore, general or detailed, and for this purpose text-books are not adapted. With a book containing nothing but drawings, a teacher can take any given sketch and lecture from it independent of the Author's own description. The book will prove useful in this direction.

Students can use the book as practice in sketching and for the purpose of developing their own descriptive powers in explaining a machine without being influenced by the description associated with such a drawing in a text-book.

In both cases, of teacher and student, their individuality will be developed.

Suggestions for improvement and additions will be greatly valued by Publishers and Author.

WM. SCOTT TAGGART.

1903.

NOTE TO SECOND EDITION

A NUMBER of new illustrations have been added to this edition, and as they include many details of two well-known S.A. Mules not hitherto illustrated in the text-books, they will prove interesting to the reader. A new Comber for short fibres is also illustrated that will add to the value of the book.

WM. SCOTT TAGGART.

1911.

NOTE TO THIRD EDITION

THE whole of the book is still modern, so that there has been no necessity to eliminate any of the illustrations. On the other hand, rearrangements and improvements of cotton machinery have occurred which are duly noted and included in this edition. The book has also been enhanced in value by the inclusion of a large number of examples of various makers' machines to illustrate details of construction. Diagrams to illustrate the action of carding, drafting, etc., have also been included.

Fancy yarns and their production have received attention by the inclusion of a number of drawings of the mechanical methods employed in producing them.

Winding, Doubling, Gassing, and the Preparation of Yarns are important items that have been given fully.

WM. SCOTT TAGGART.

BOLTON.

LIST OF ILLUSTRATIONS

VOLUME I

Full Explanations will be found in Vol. I. *Cotton Spinning.*

See Appendix for further illustrations.

VOLUME II

Full Explanations will be found in Vol. II. *Cotton Spinning.*

VOLUME III

Full Explanations will be found in Vol. III. *Cotton Spinning.*

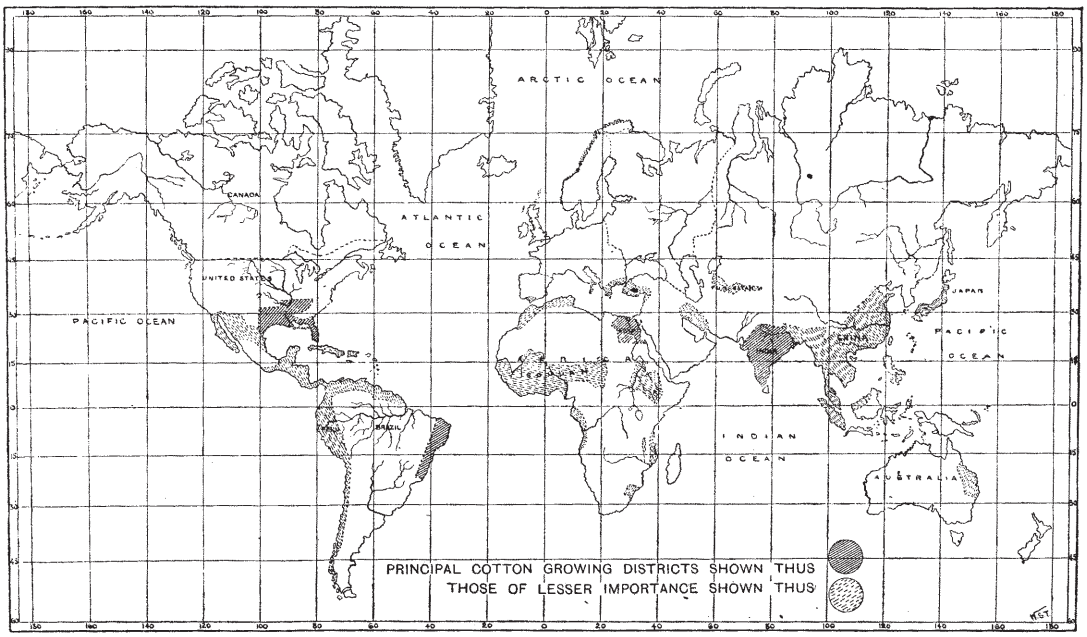
See Appendix for further illustrations.

APPENDIX

Very complete descriptions, explanations, and full calculations of above illustrations are or will be given in the Author's three-volume book on *Cotton Spinning* and *Cotton Spinning Calculations.*

COTTON MACHINERY SKETCHES

VOLUME I



MAP OF THE COTTON GROWING COUNTRIES OF THE WORLD

FIG. 1.

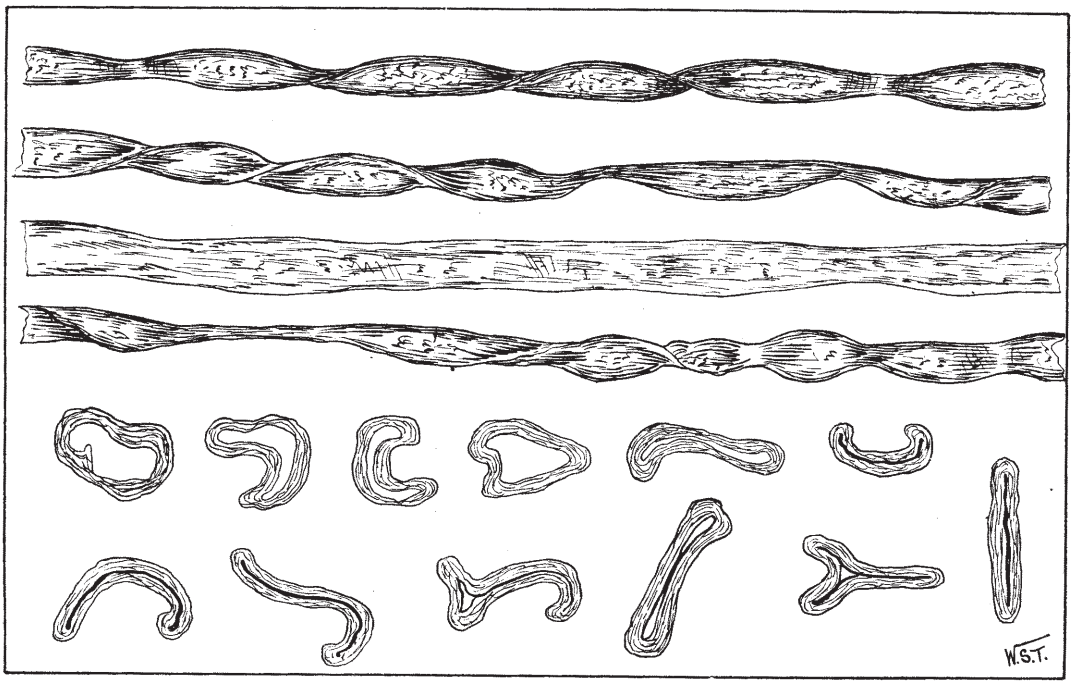


FIG. 2.

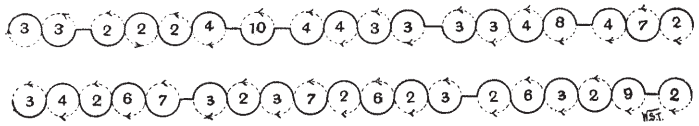


FIG. 3.

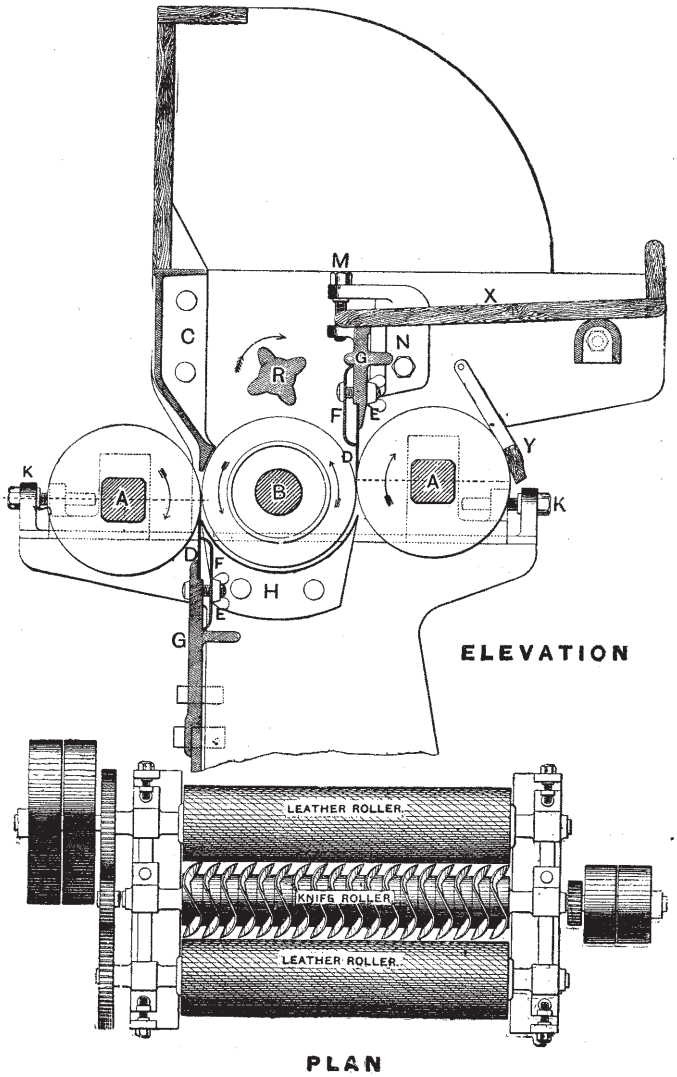


FIG. 4.—KNIFE ROLLER GIN. Plan and Section.

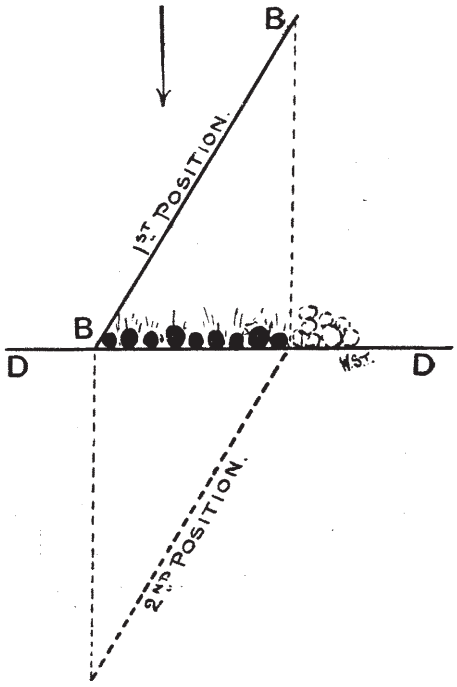


FIG. 5.

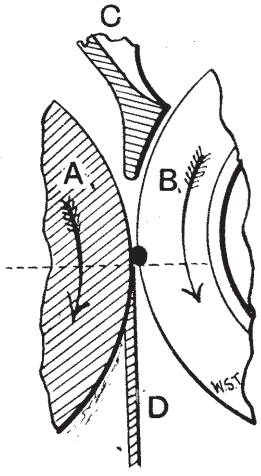


FIG. 6

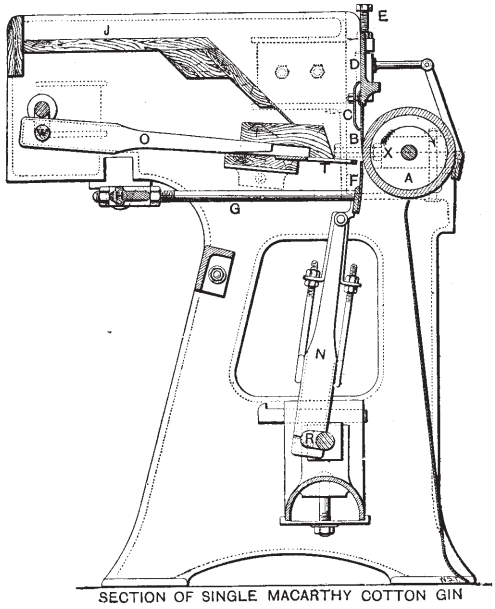


FIG. 7.

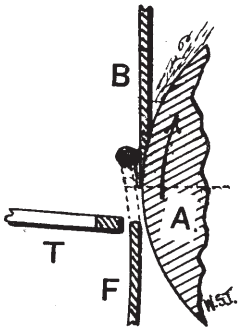


FIG. 8.

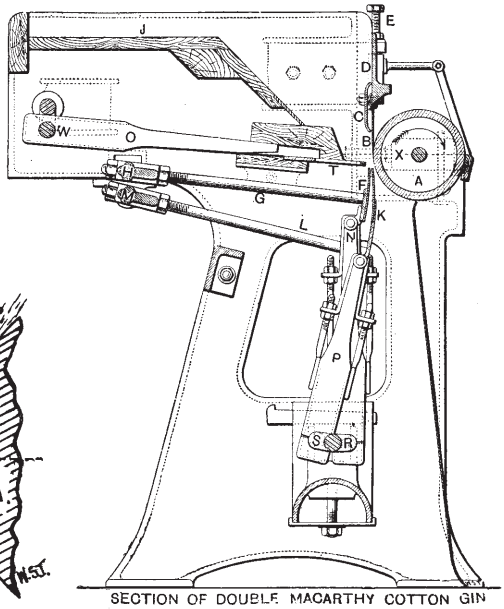


FIG. 9.

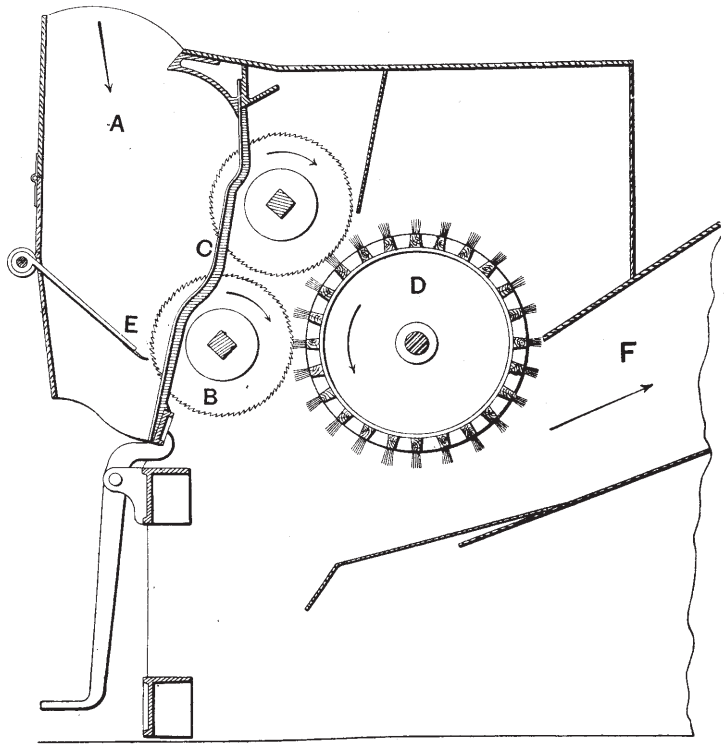


FIG. 10.

FIG. 11.

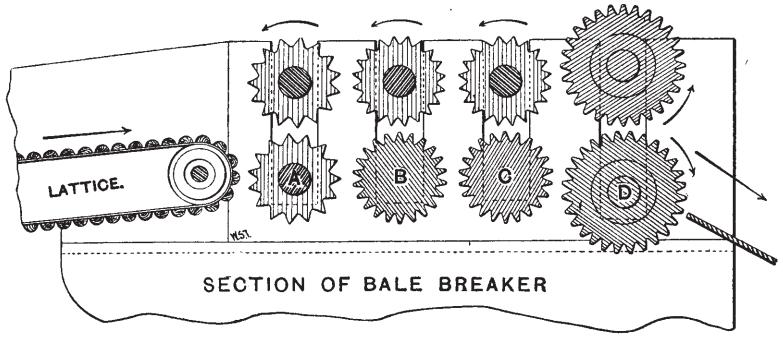


FIG. 12.

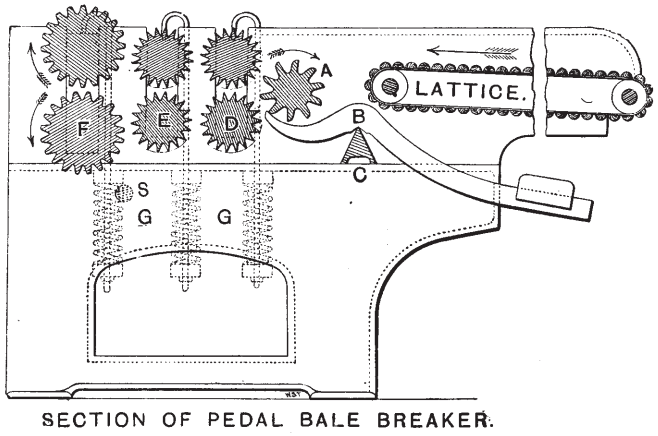


FIG. 13.

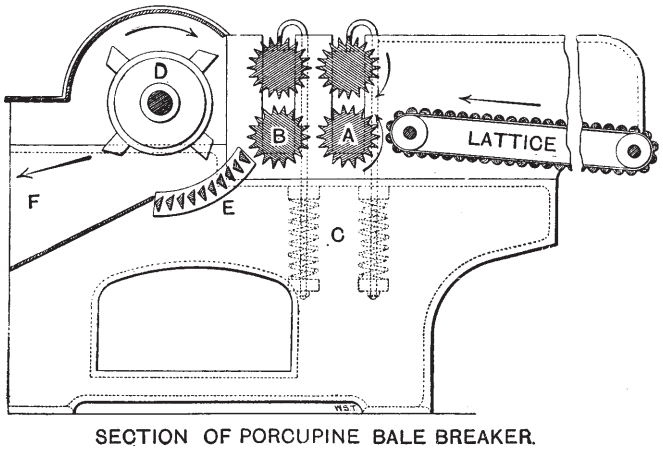
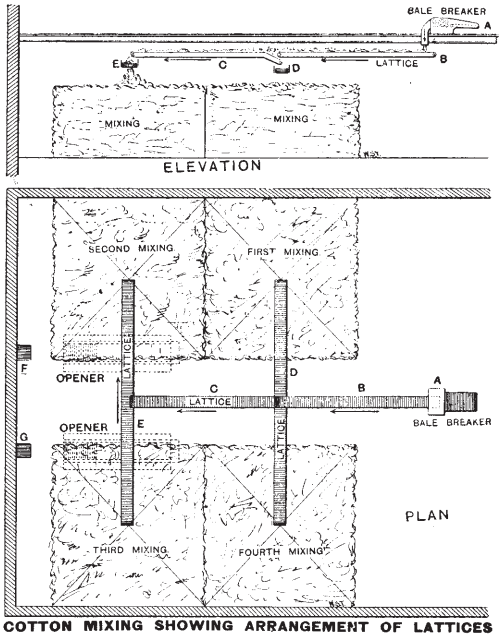
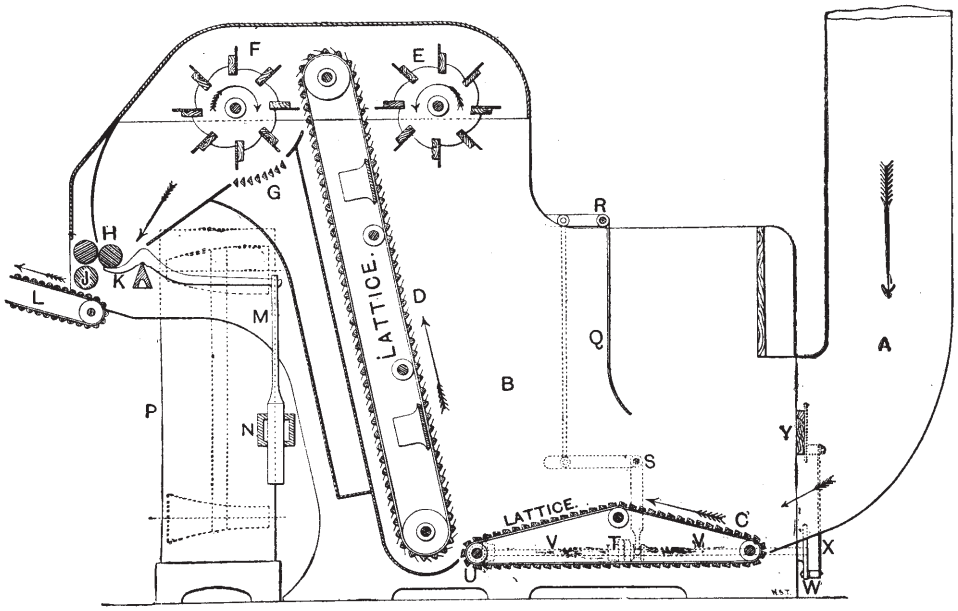


FIG 14.




F
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LATTICE.
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FIG. 16.

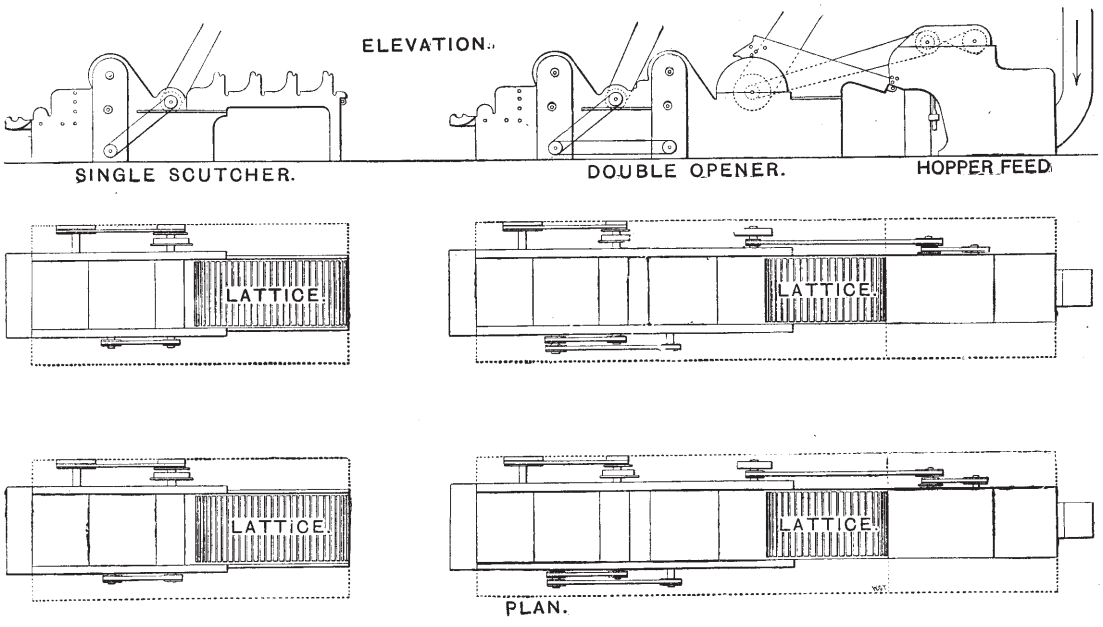
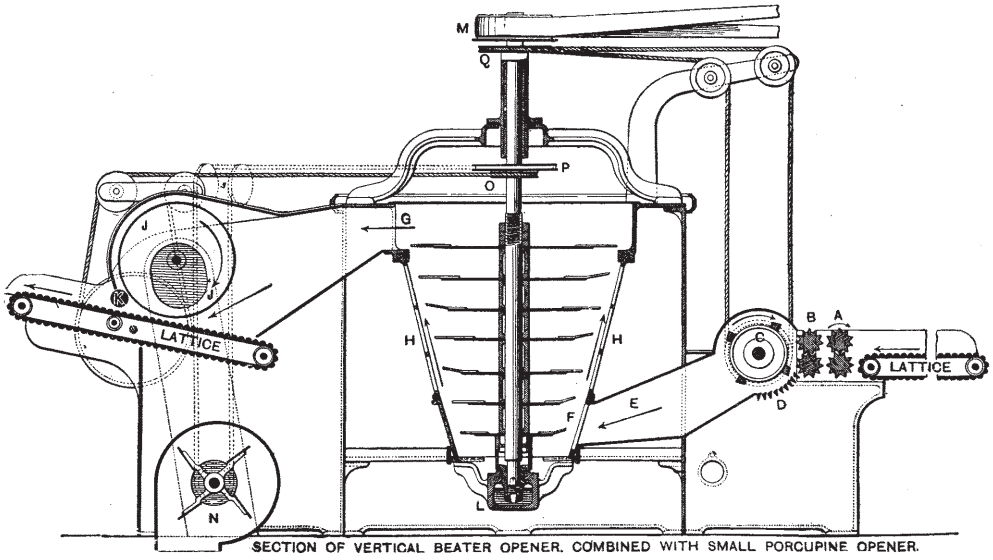

ELEVATION.
SINGLE SCUTCHER.
DOUBLE OPENER.
HOPPER FEED
LATTICE.
LATTICE.
LATTICE.
LATTICE.
PLAN.

FIG. 17.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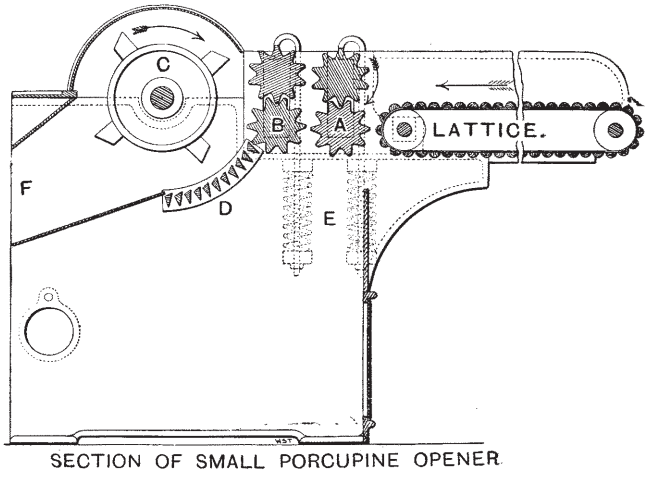
N
SECTION OF VERTICAL BEATER OPENER. COMBINED WITH SMALL PORCUPINE OPENER.

FIG. 18.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SECTION OF SMALL PORCUPINE OPENER.

FIG. 19.

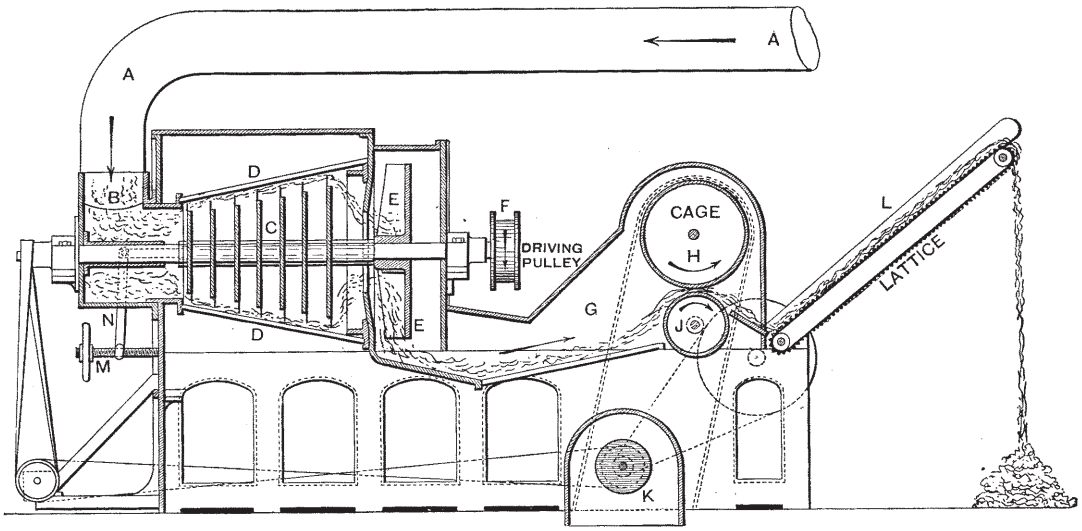


FIG. 20.

FIG. 21.

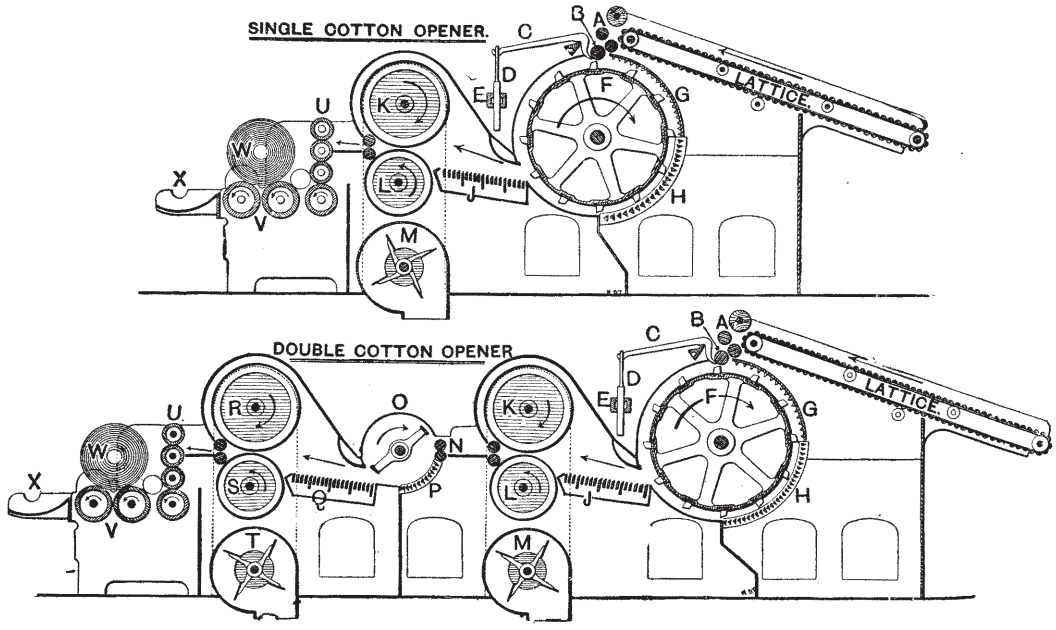


FIG. 22.

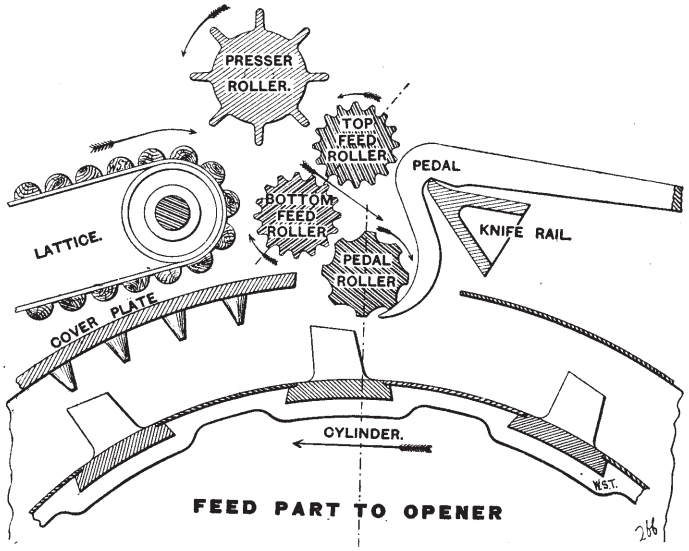
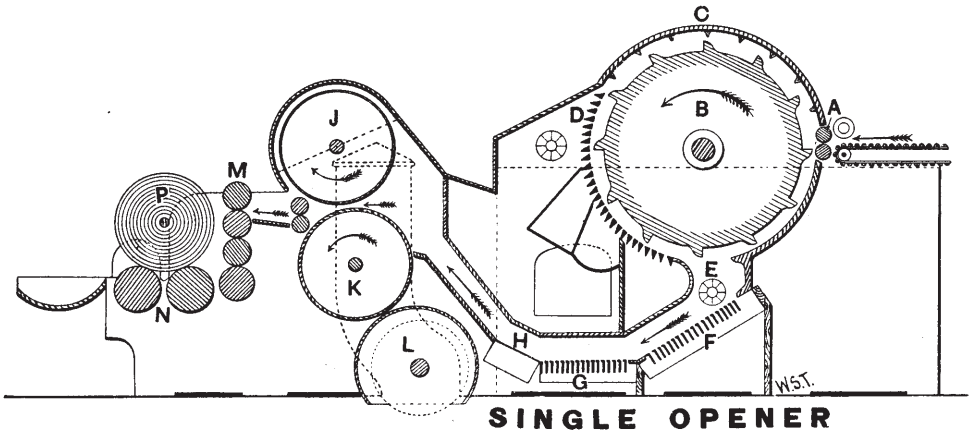

PRESSER ROLLER.
TOP FEED ROLLER.
PEDAL
BOTTOM FEED ROLLER
KNIFE RAIL.
LATTICE.
PEDAL ROLLER
COVER PLATE
CYLINDER.
W.S.T.
FEED PART TO OPENER

FIG. 23.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W.S.T.
SINGLE OPENER

FIG. 24.

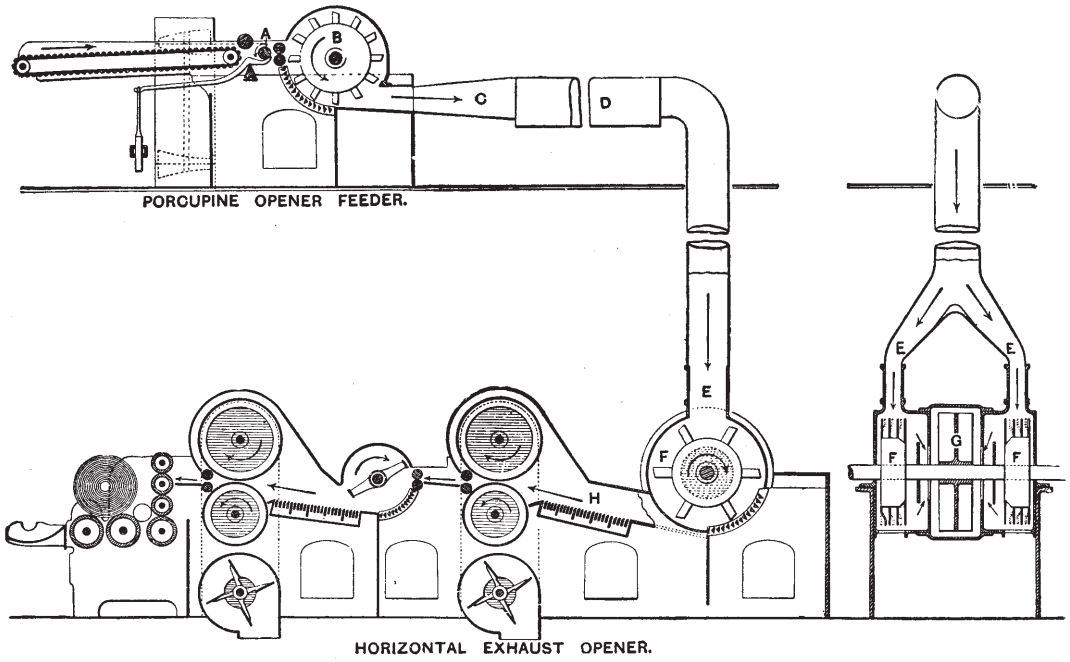


FIG. 25.

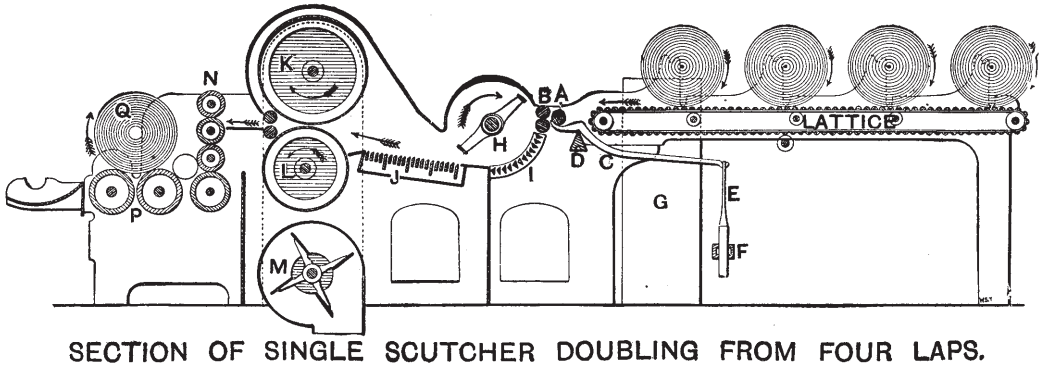


FIG. 26.

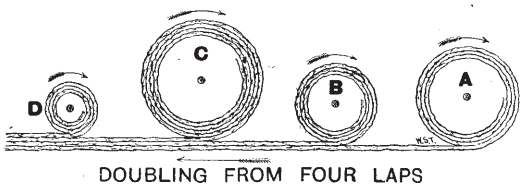


FIG. 27.

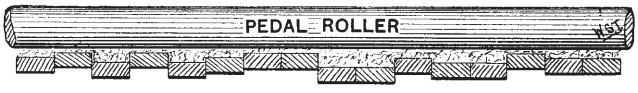


FIG. 28.

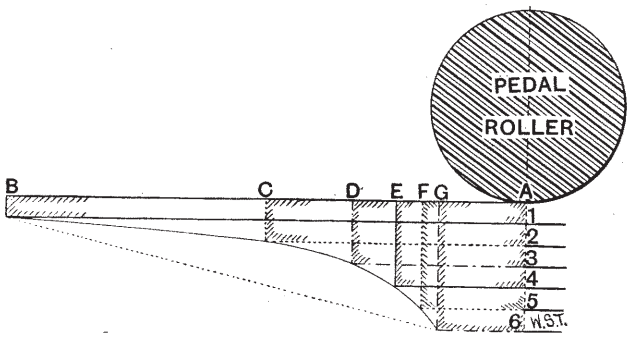


DIAGRAM OF REGULATOR CONE DRUMS.

FIG. 29.

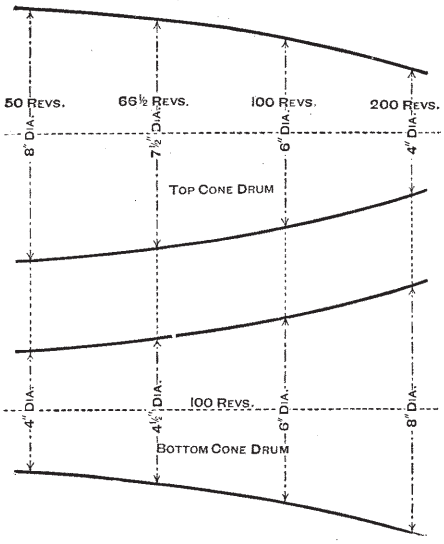


DIAGRAM OF REGULATOR CONE DRUMS.

FIG. 30.

FIG. 31.

FIG. 32.

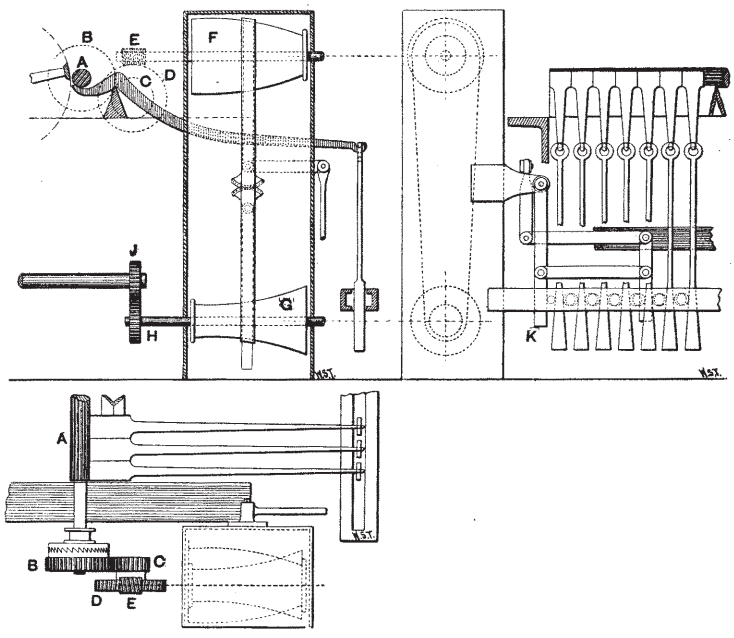


FIG. 33.

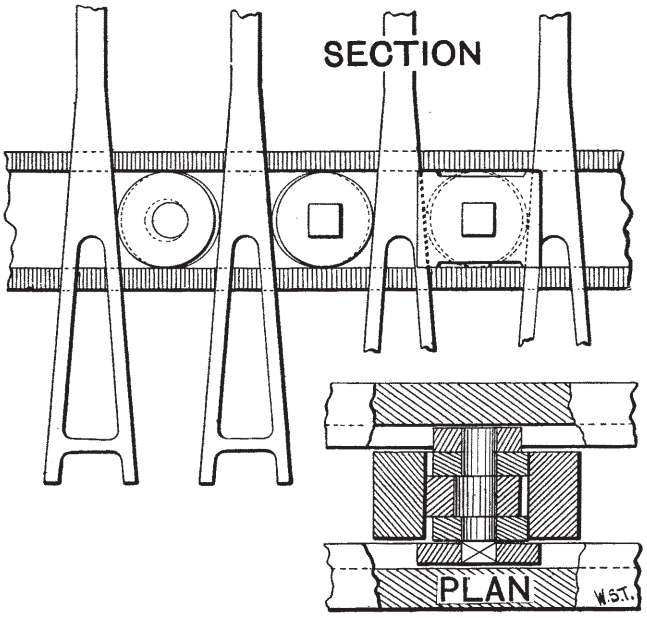


FIG. 34.

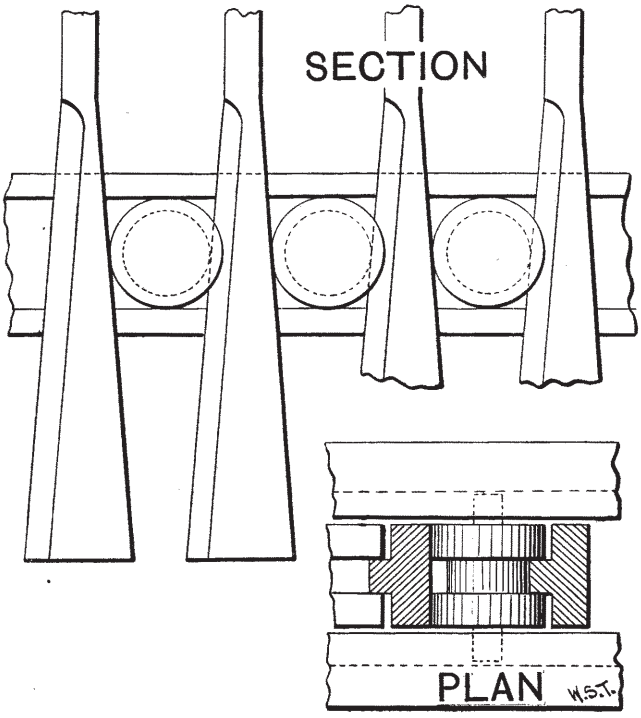


FIG. 35.

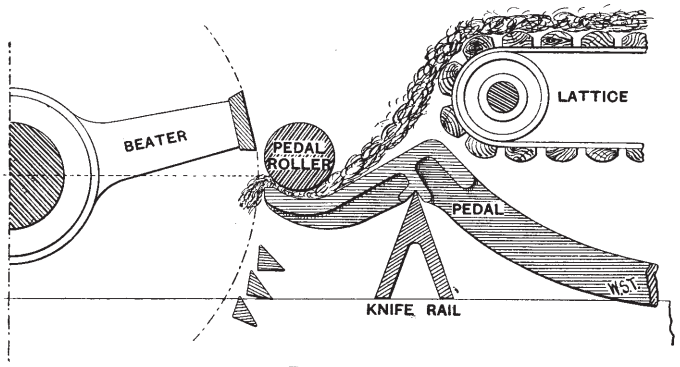


FIG. 36.

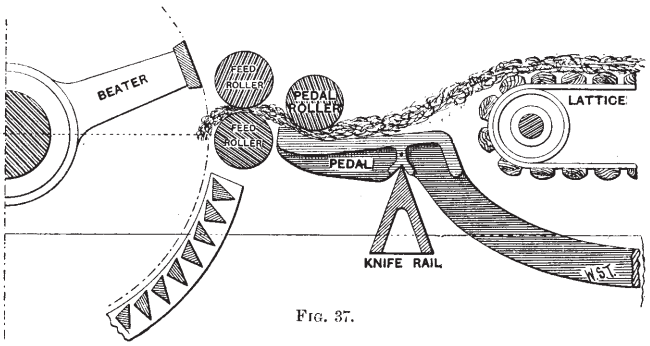


FIG. 37.

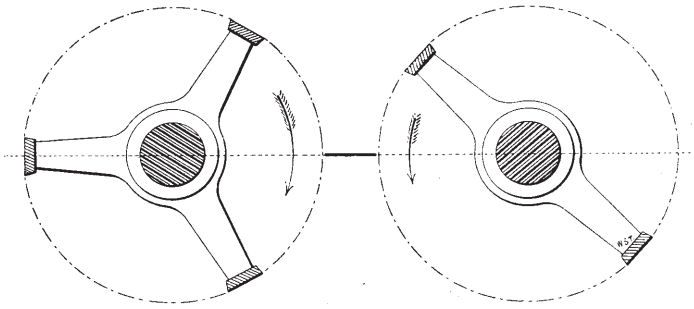


FIG. 38.

FIG. 39.

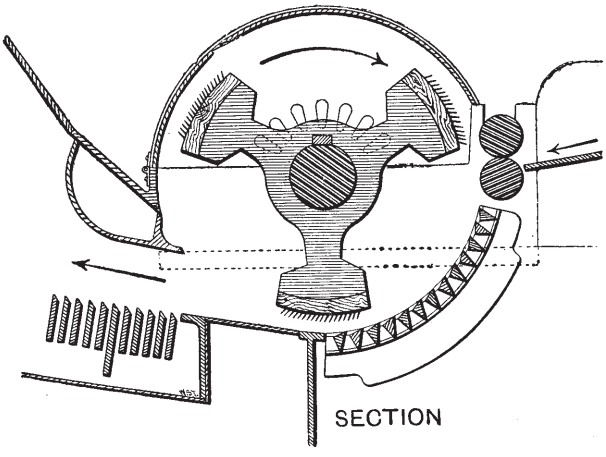


FIG. 40.

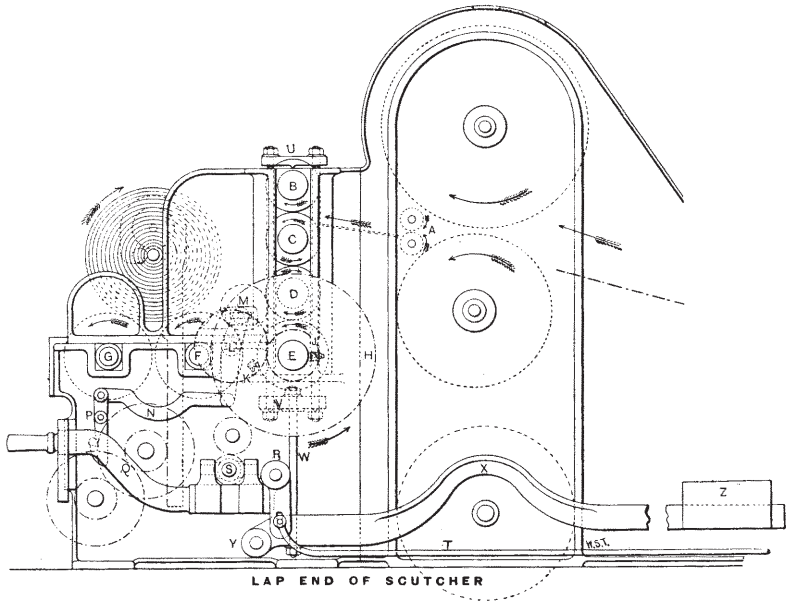


FIG. 41.

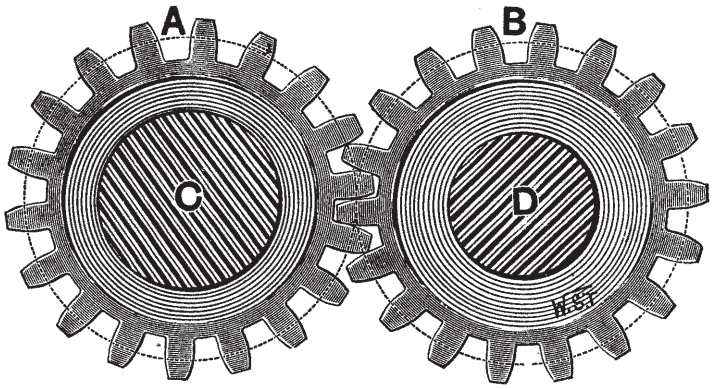


FIG. 42.

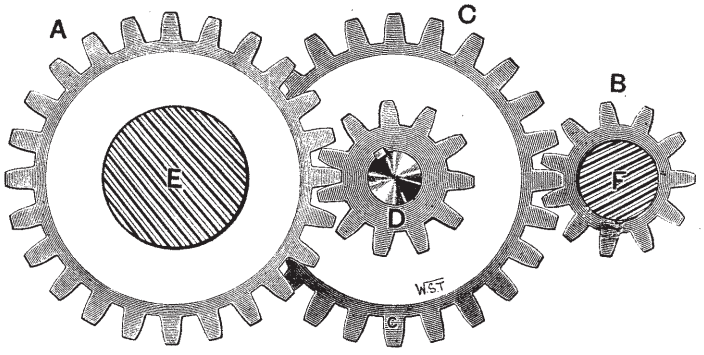
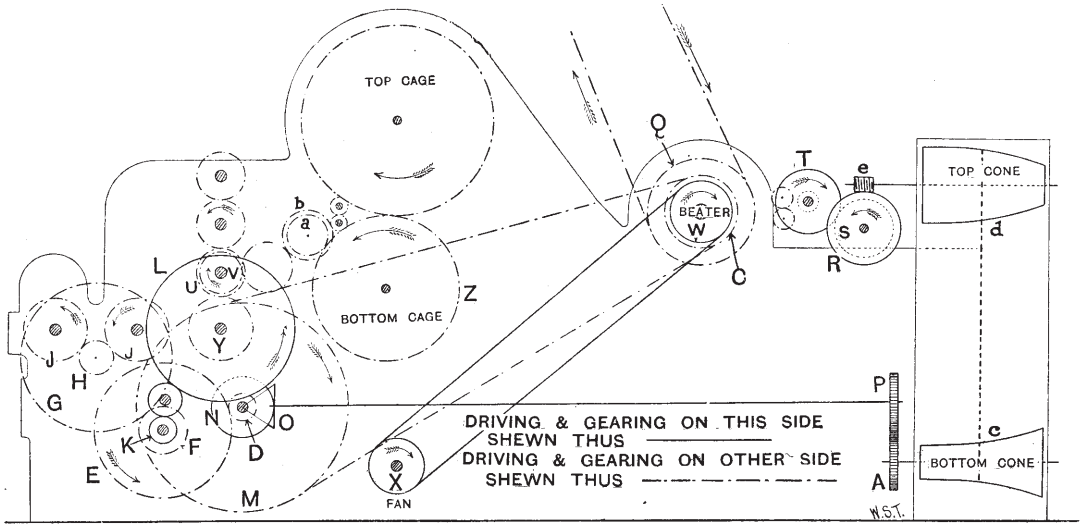
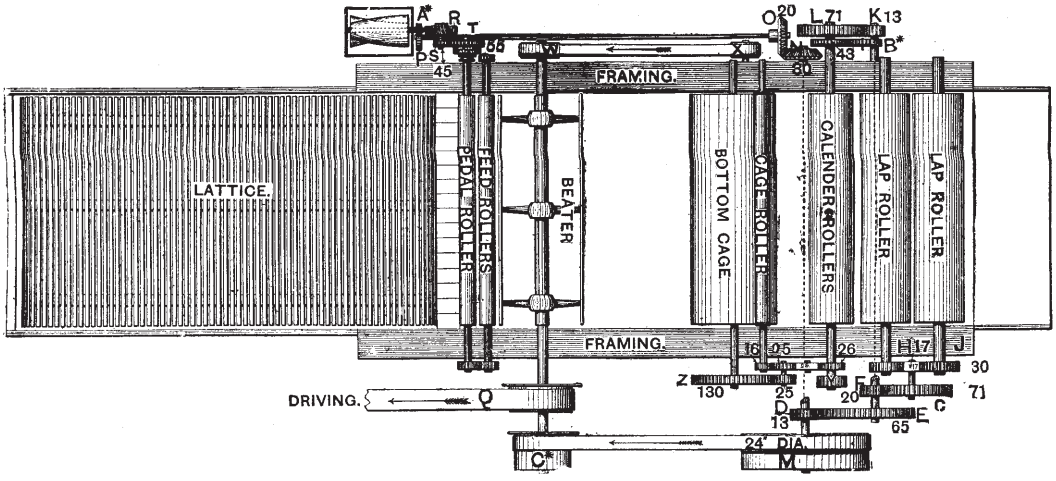


FIG. 43.



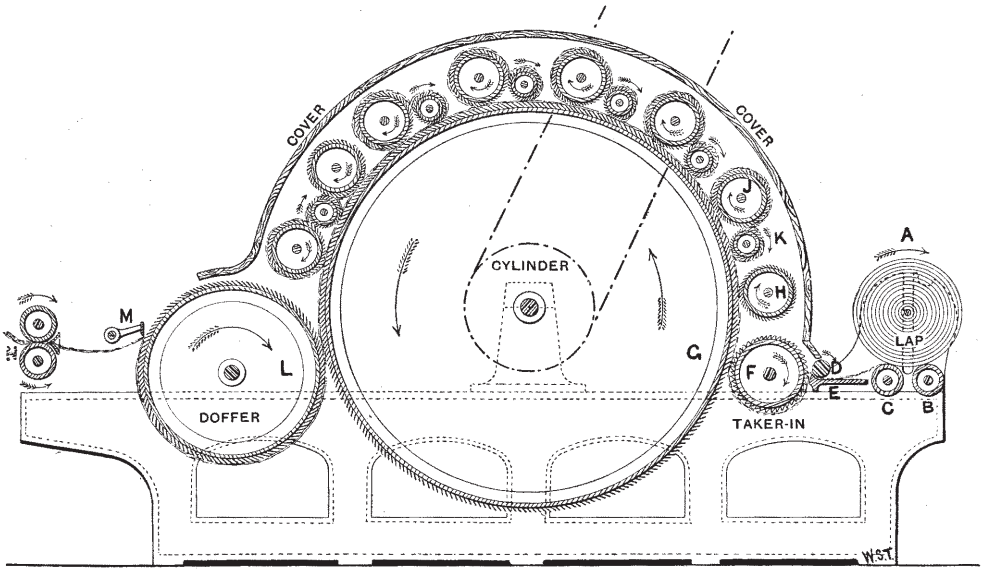
ELEVATION OF GEARING OF SCUTCHER

FIG. 44.



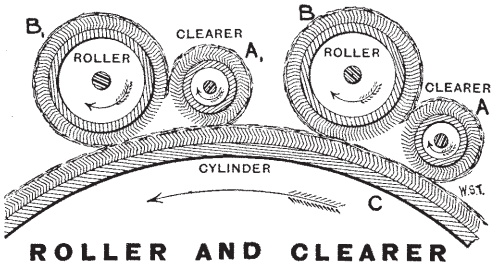
PLAN OF GEARING OF SINGLE SCUTCHER.

FIG. 45.



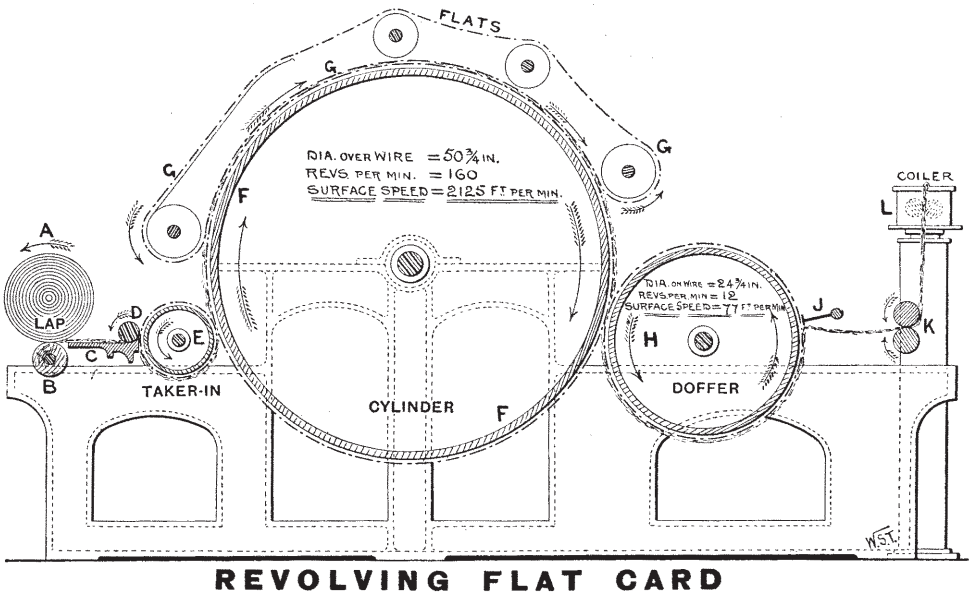
ROLLER AND CLEARER CARD

FIG. 46.



ROLLER AND CLEARER

FIG. 47.



REVOLVING FLAT CARD

FIG. 48.

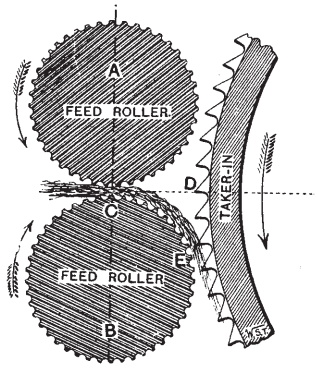


FIG. 49.

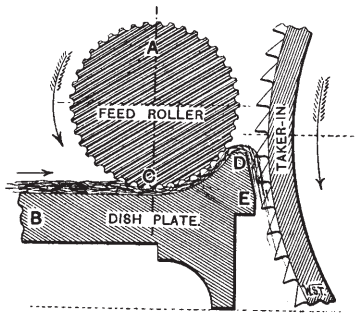


FIG. 50.

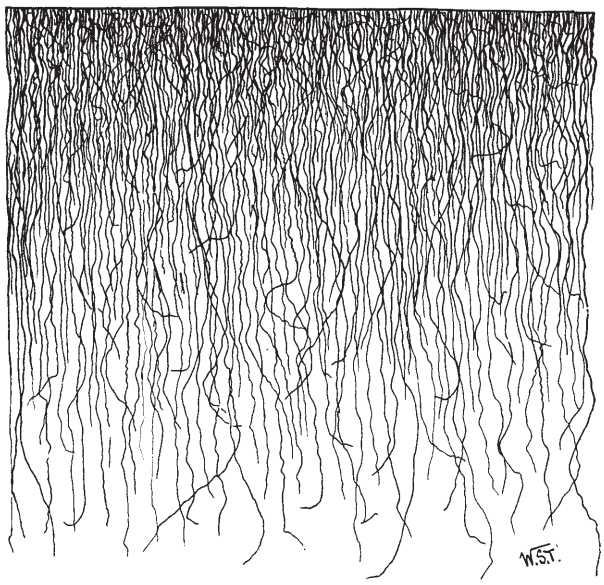


FIG. 51.

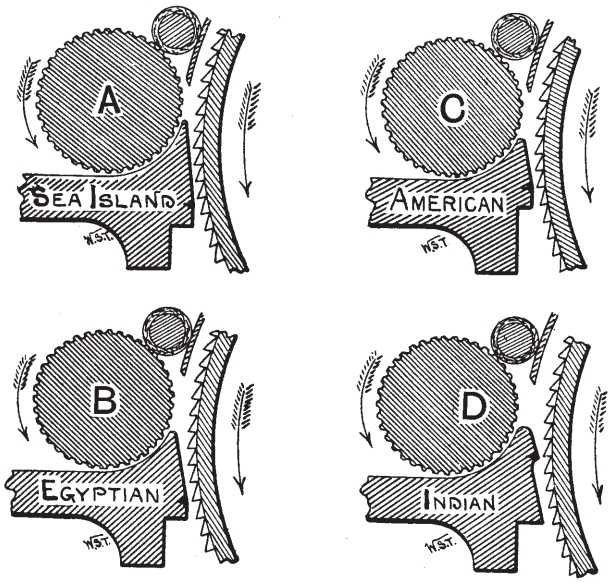
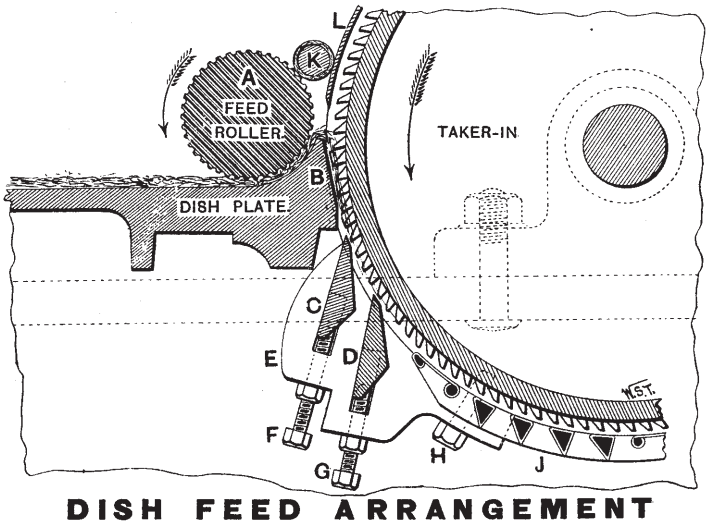


FIG. 52.



DISH FEED ARRANGEMENT

FIG. 53.

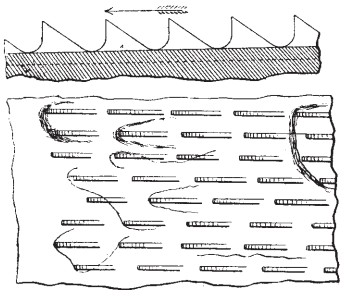


FIG. 54.

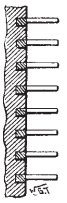


FIG. 55.

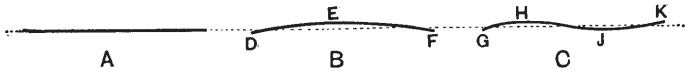


FIG. 57.

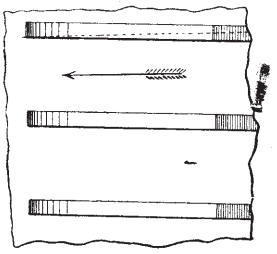


FIG. 56.

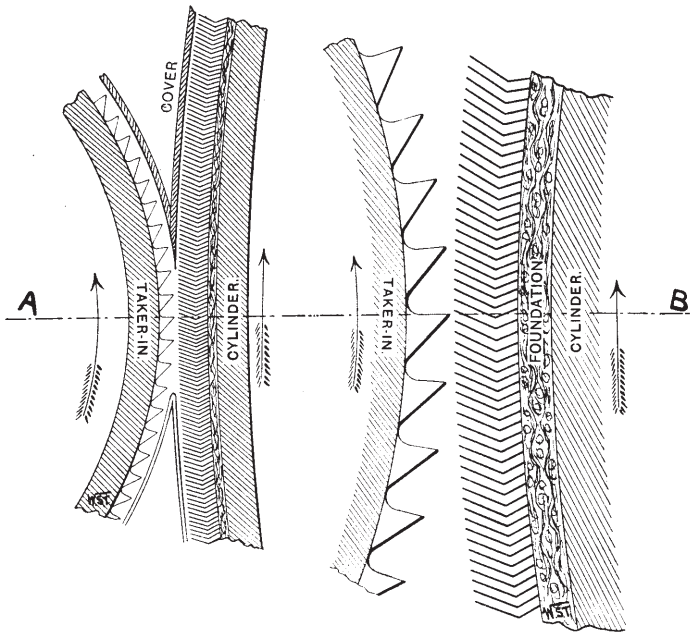


FIG. 58. FIG. 59.

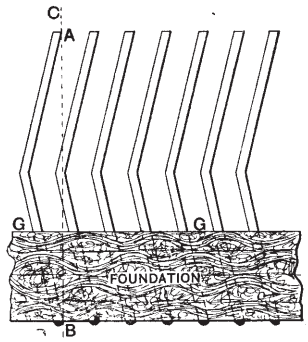


FIG. 60.

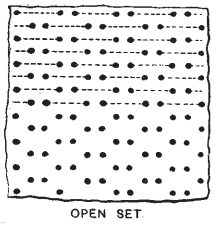


FIG. 61.

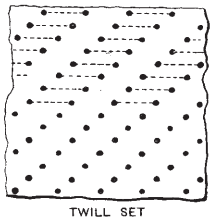


FIG. 62.

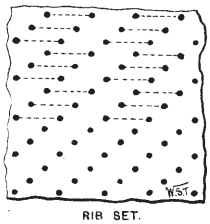


FIG. 63.

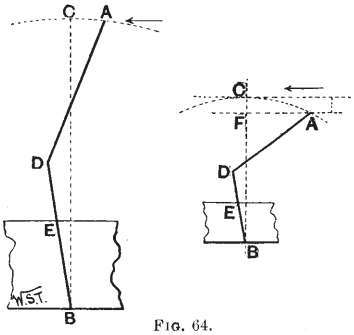


FIG. 64.

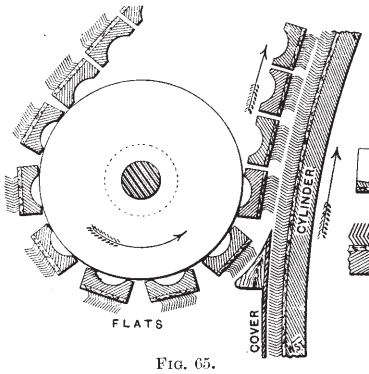


FIG. 65.

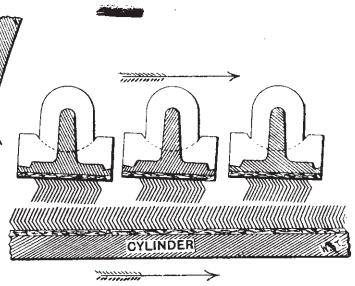


FIG. 66.

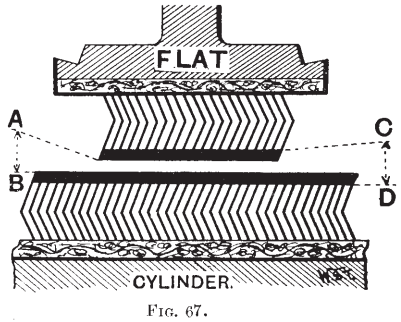


FIG. 67.

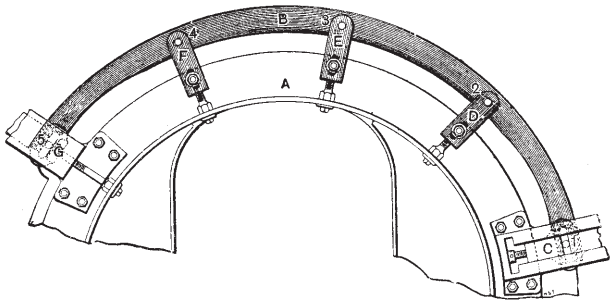


FIG. 68.

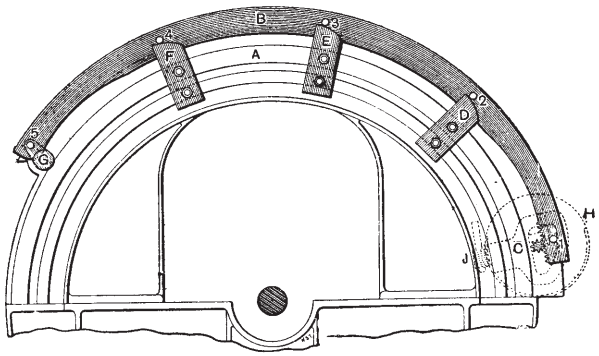


FIG. 69.

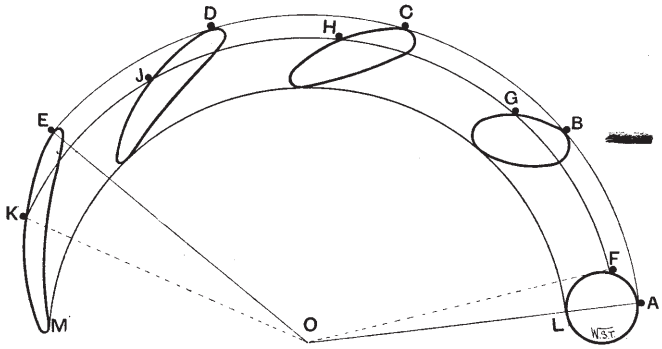
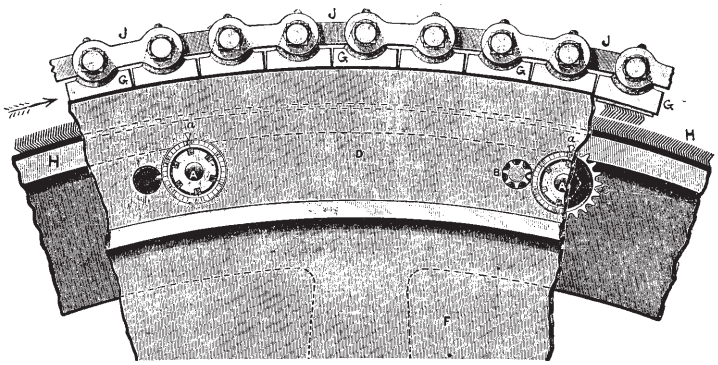


FIG. 70.

FIG. 71.



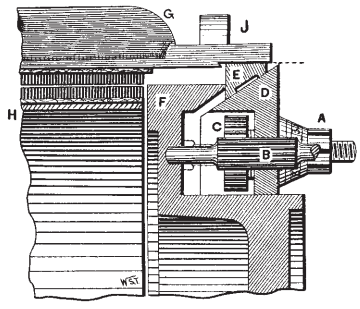


FIG. 72.

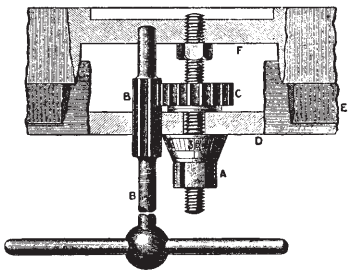


FIG. 73.

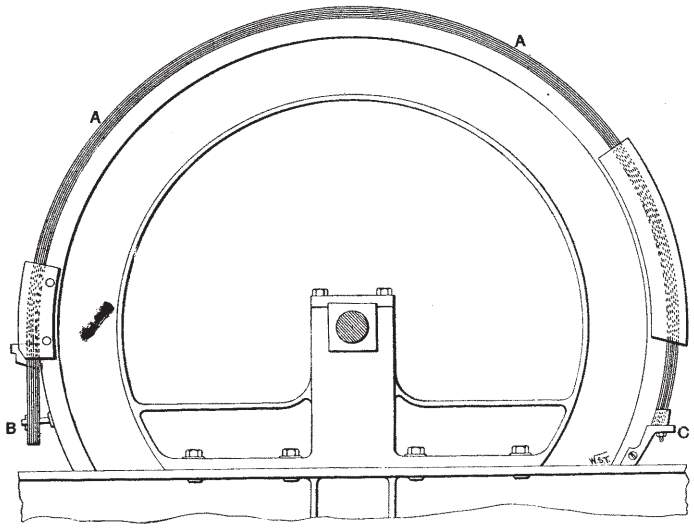


FIG. 74.

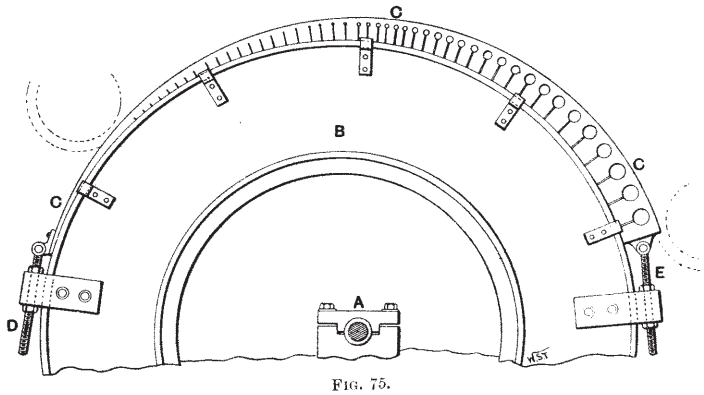


FIG. 75.

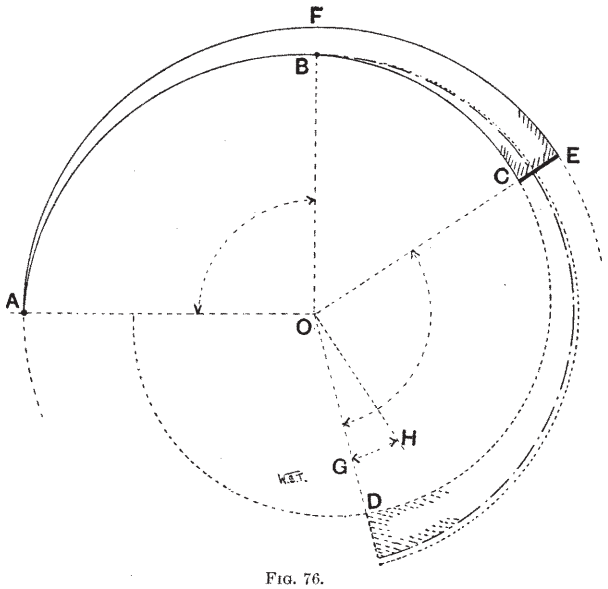


FIG. 76.

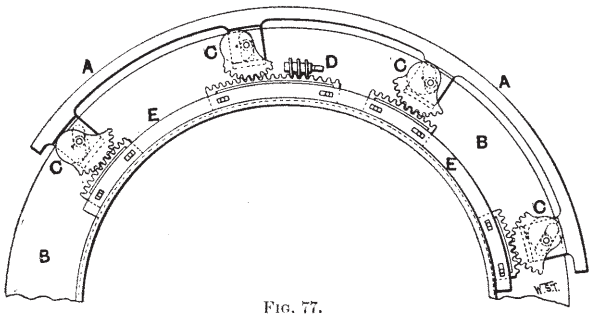


FIG. 77.

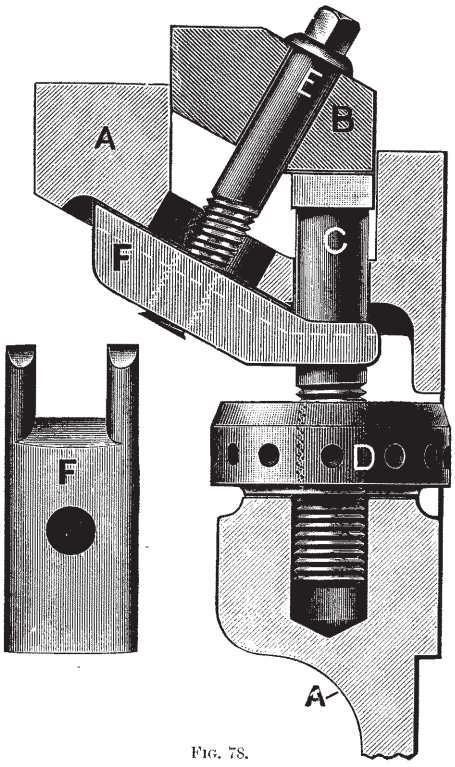
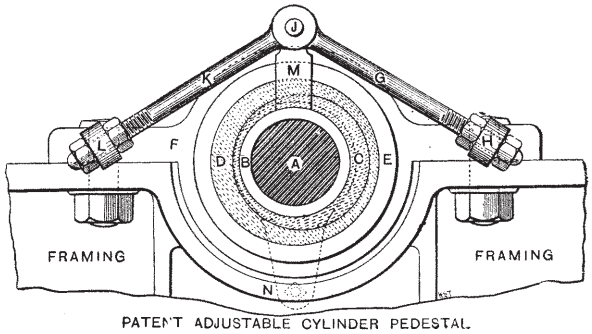


FIG. 78.



PATENT ADJUSTABLE CYLINDER PEDESTAL.

FIG. 79.

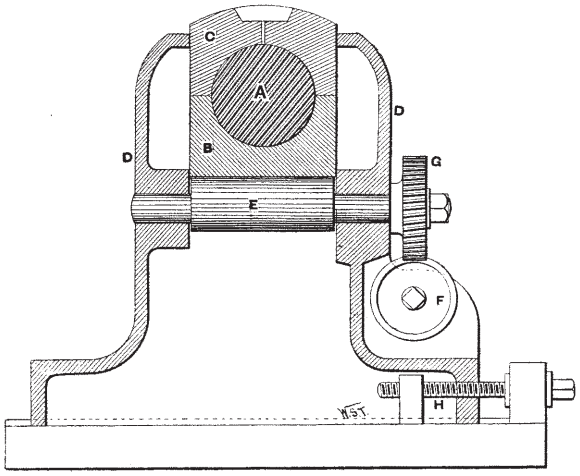


FIG. 80.

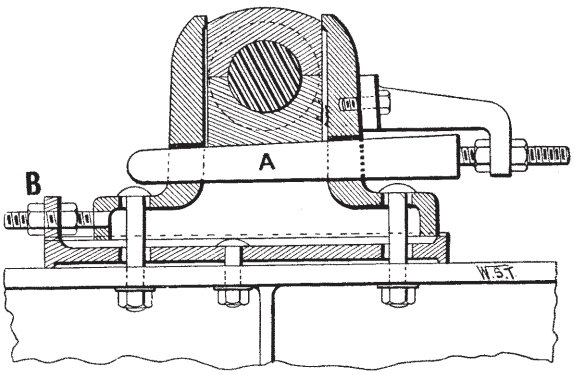


FIG. 81.

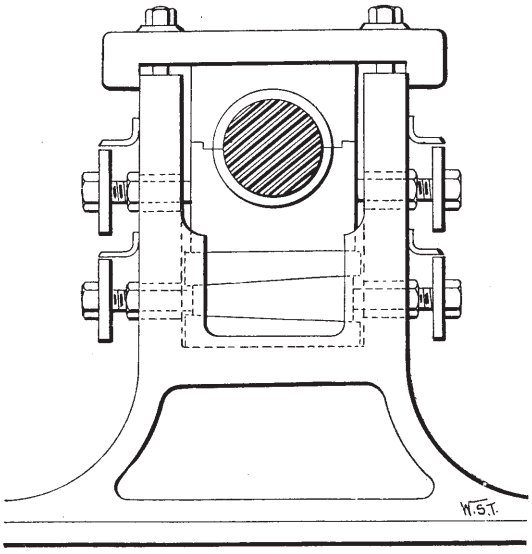


FIG. 82.

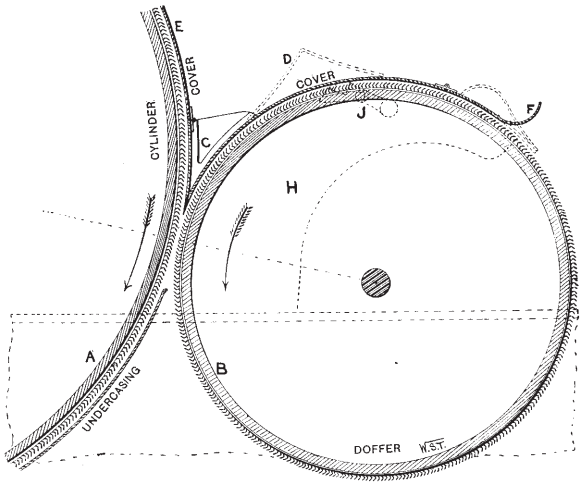


FIG. 83.

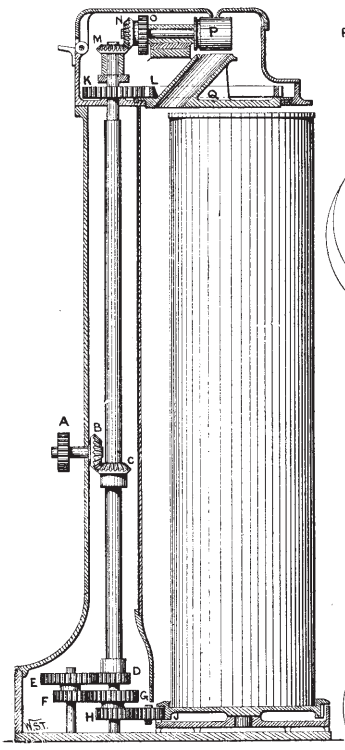


FIG. 84.

FIG. 86.

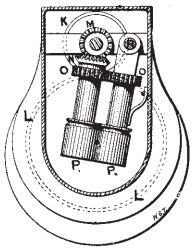


FIG. 87.

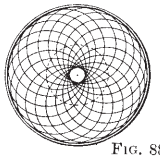


FIG. 88.

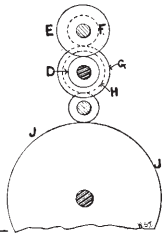


FIG. 85.

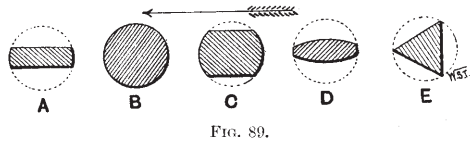


FIG. 89.

FIG. 90.

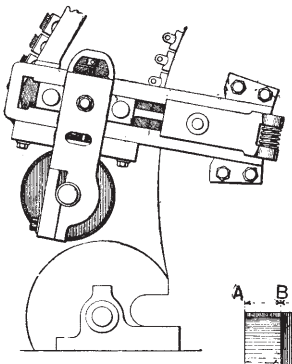


FIG. 91.

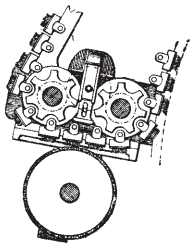
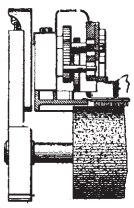
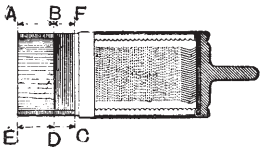


FIG. 92.





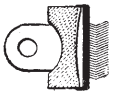


FIG. 93.

A. B. C. D. SLIDING SURFACE WHEN GRINDING.
A. B. C. E. SLIDING SURFACE WHEN CARDING.
B. F. CLEARANCE FOR RAISED SURFACE ON SLIDE WHEN GRINDING.

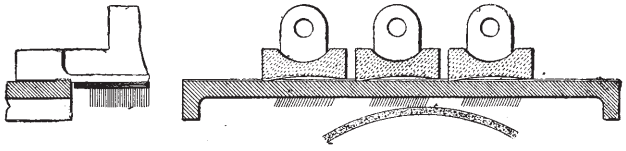


FIG. 94.

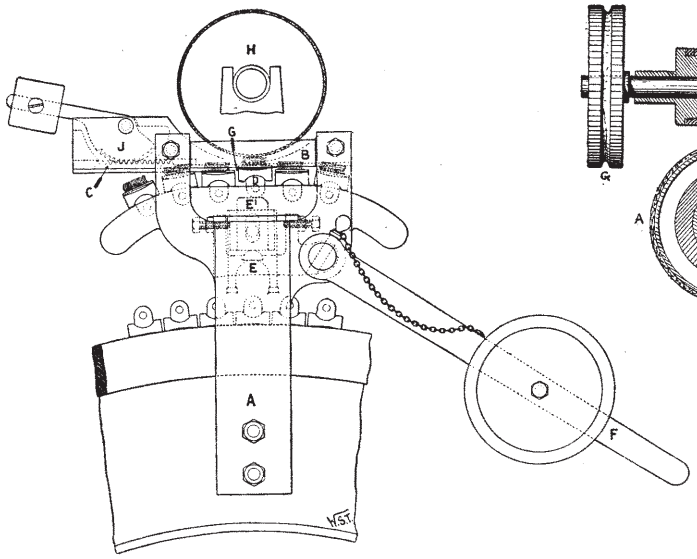


FIG. 95.

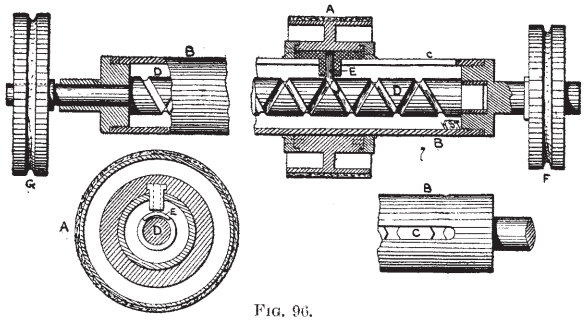


FIG. 96.

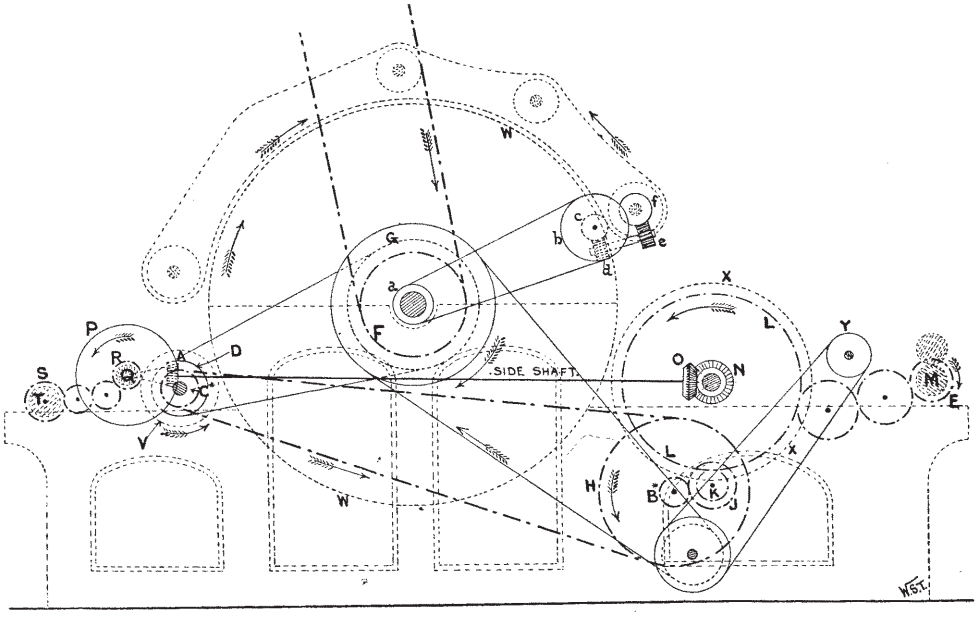
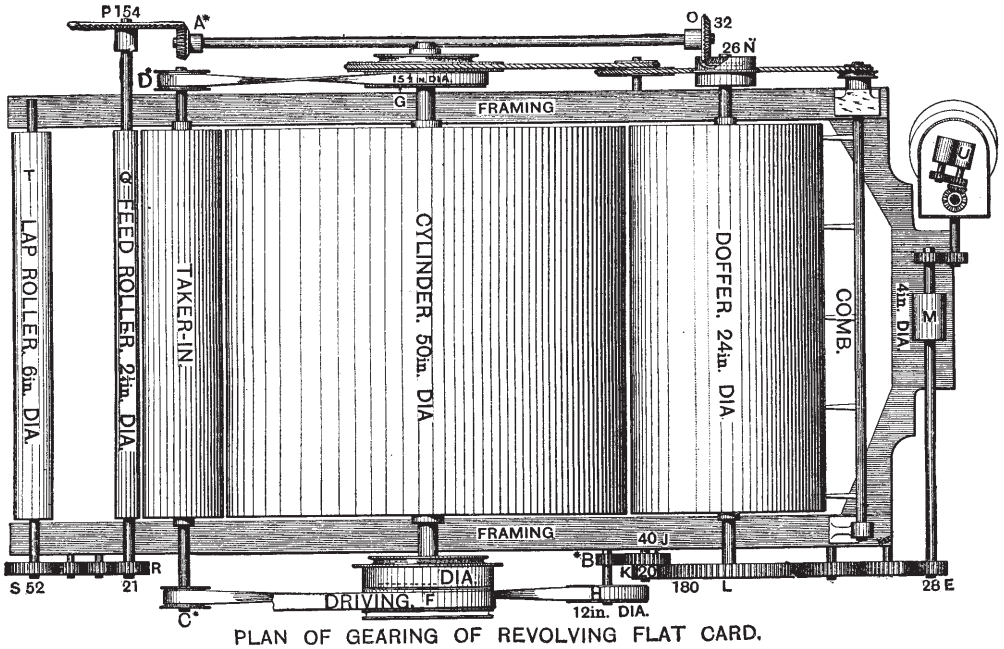


FIG. 97.



PLAN OF GEARING OF REVOLVING FLAT CARD.

FIG. 98.

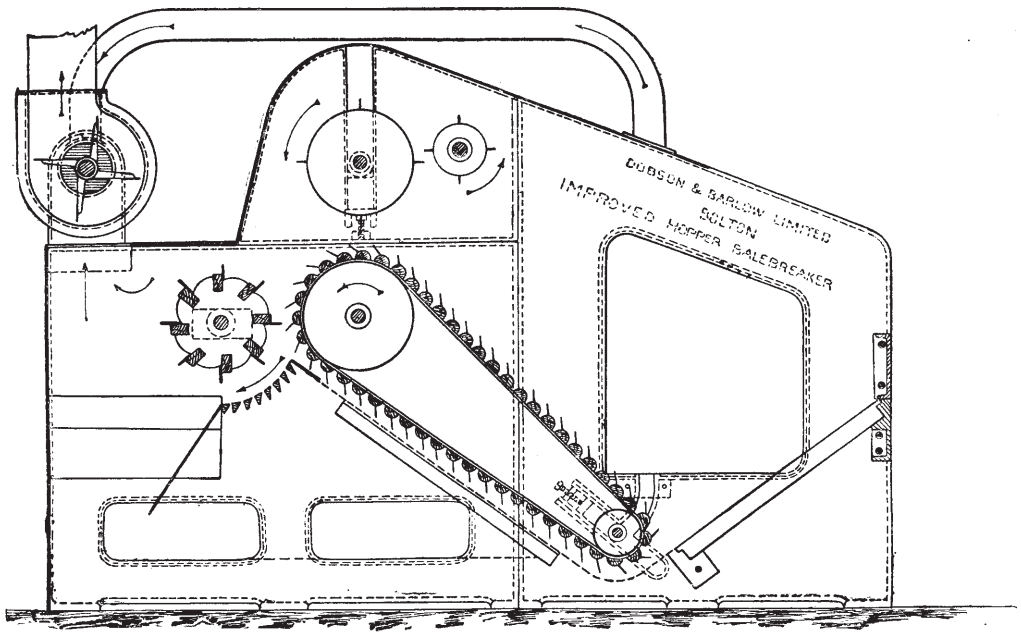


FIG. 99

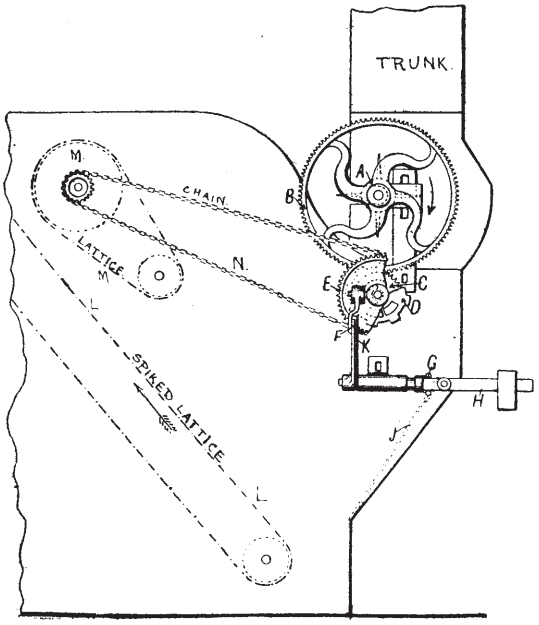


FIG. 100.

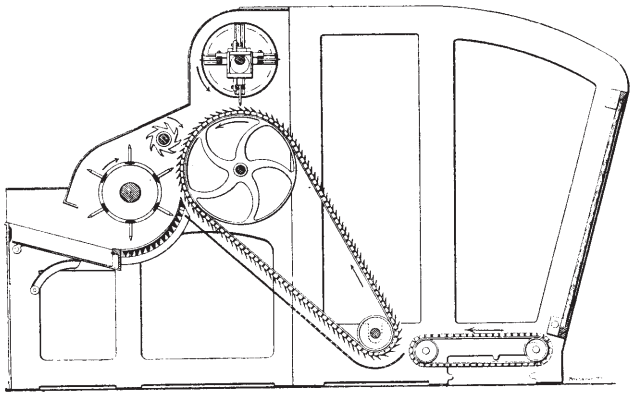


FIG. 102.

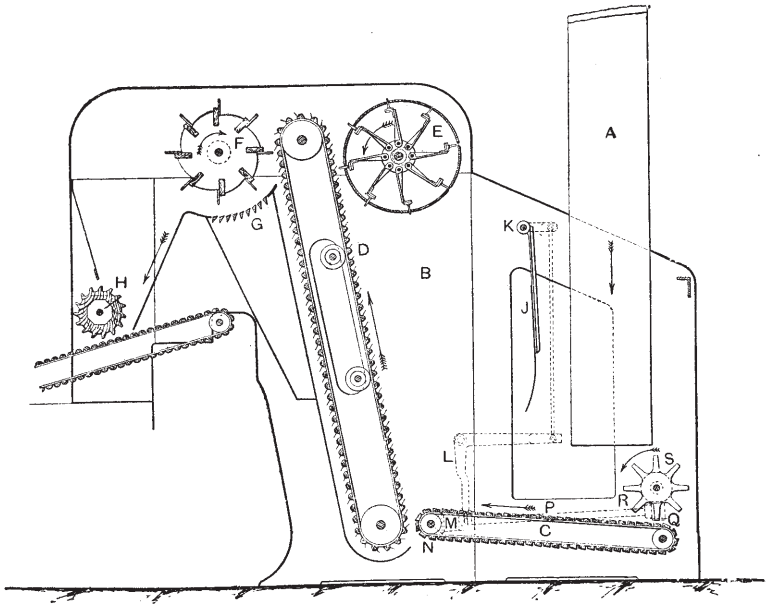


FIG. 101.

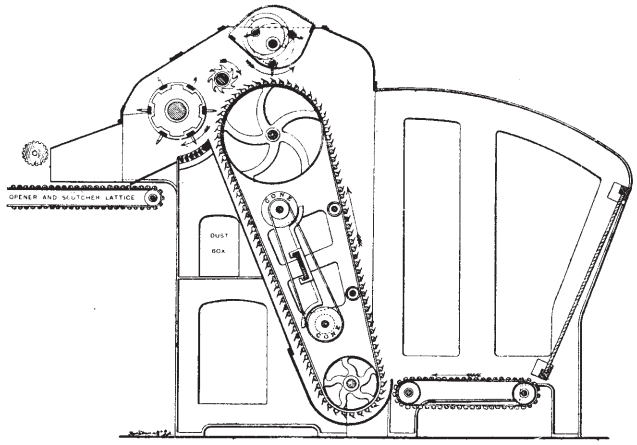


FIG. 103.

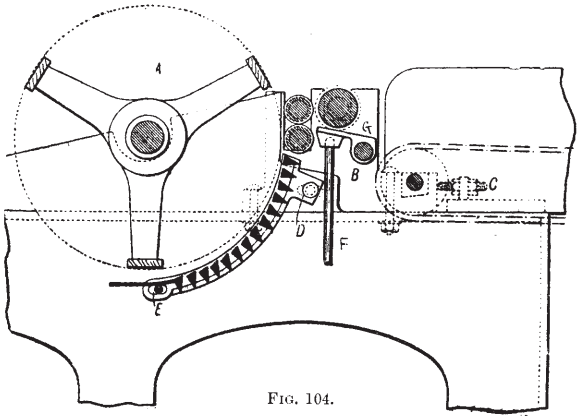


FIG. 104.

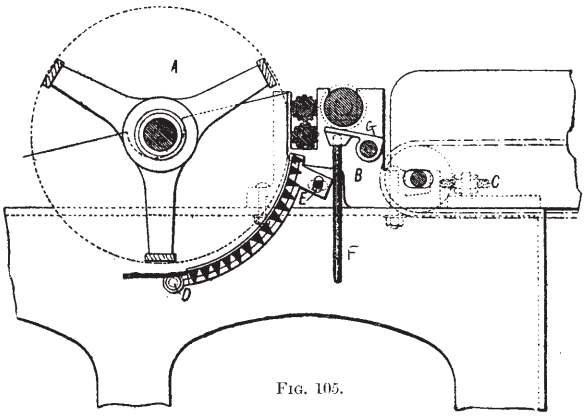


FIG. 105.

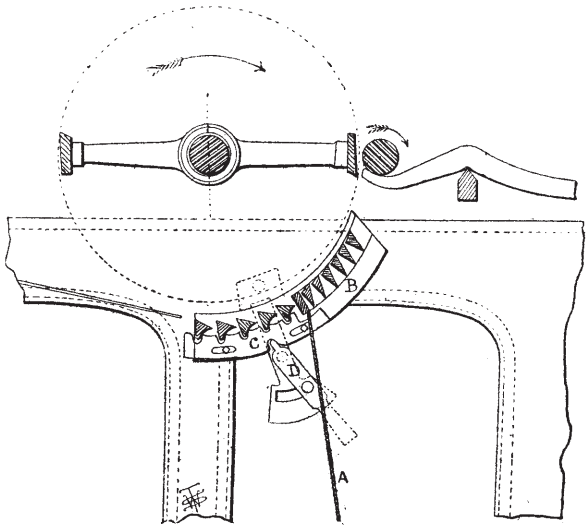


FIG. 106.

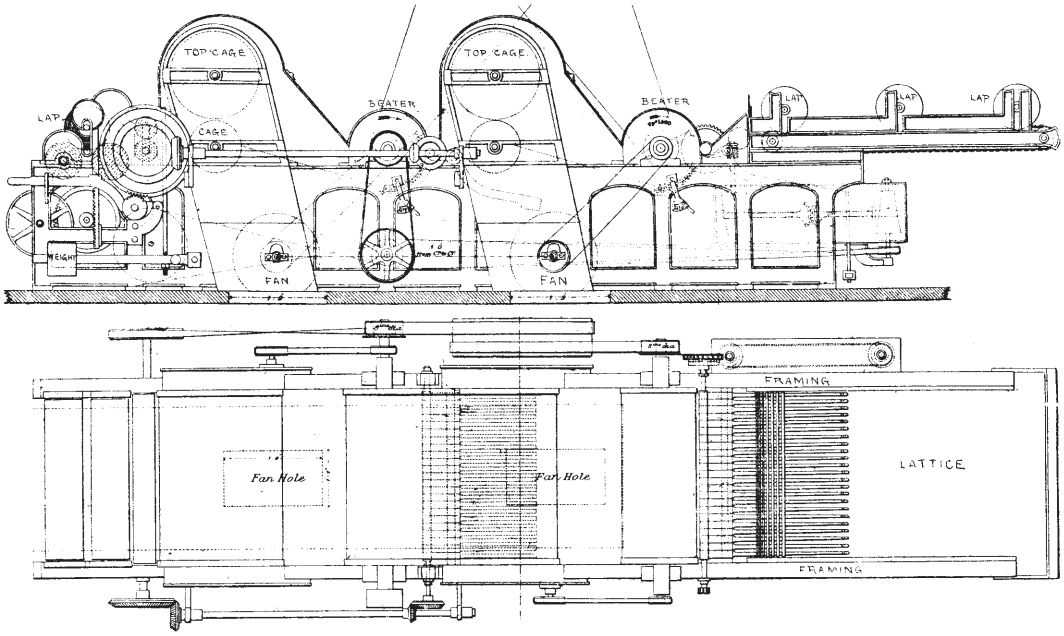


FIG. 107.

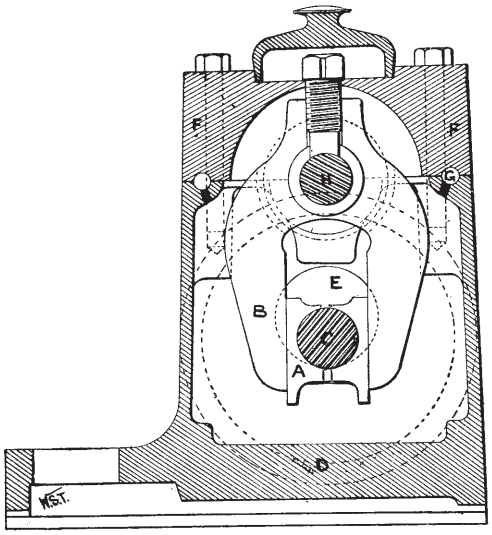


FIG. 108.

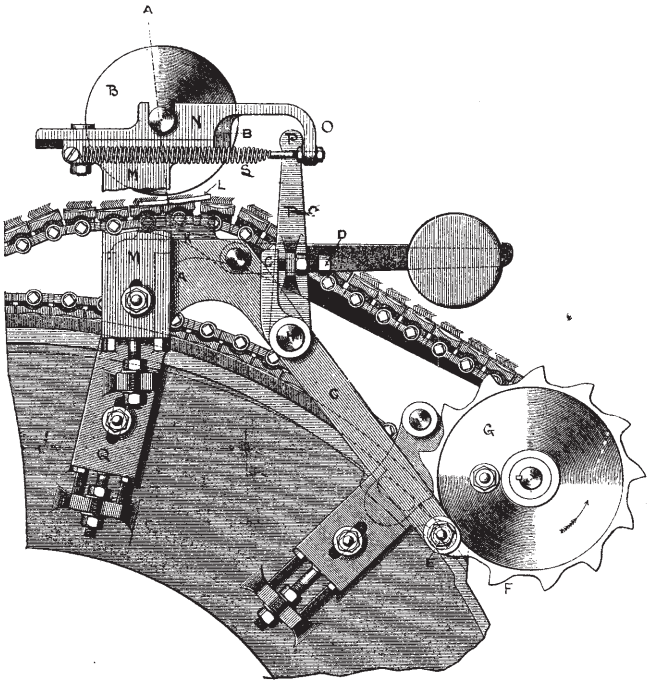


FIG. 109.

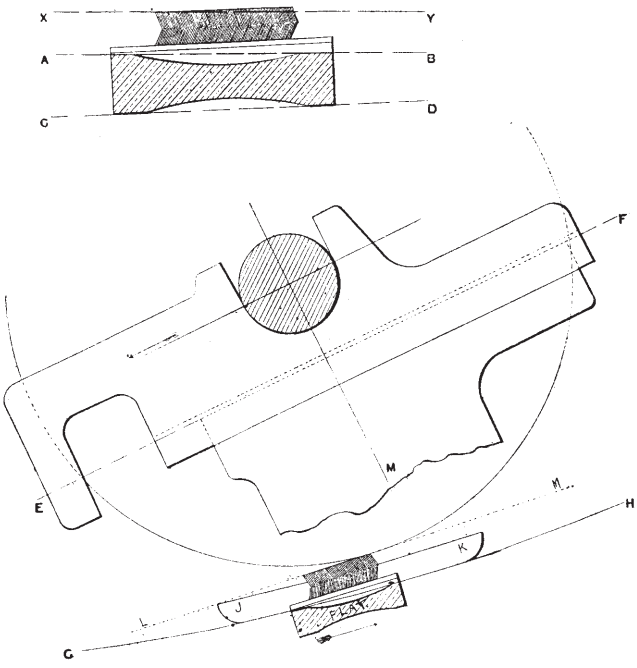
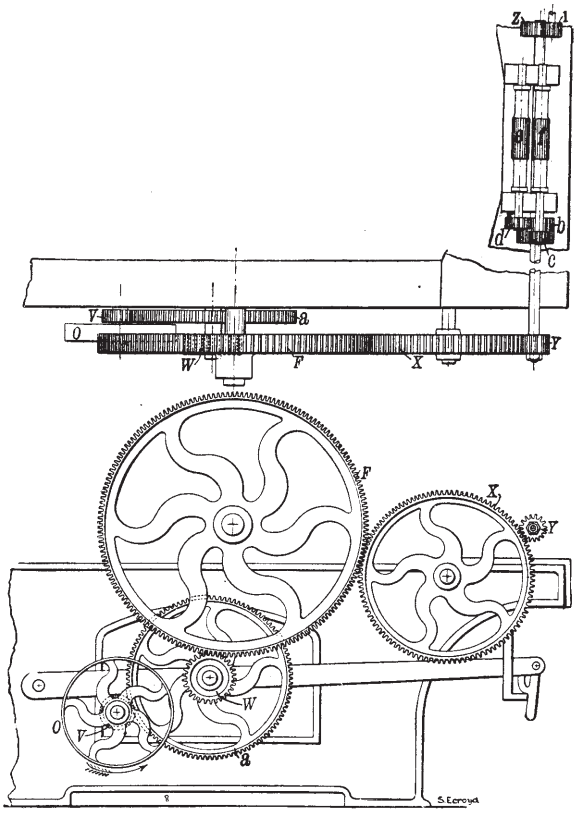


FIG. 110.



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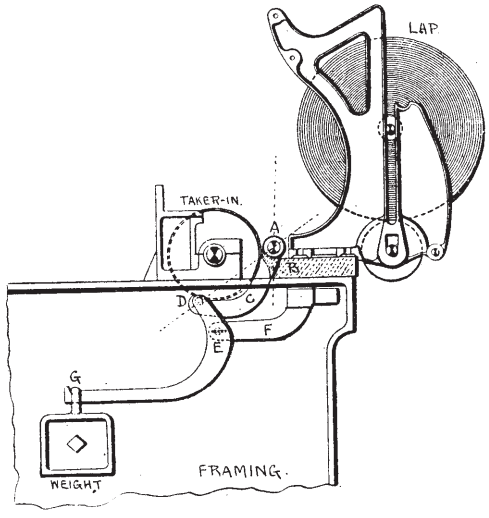

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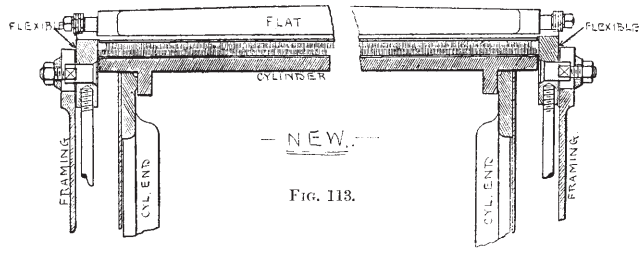

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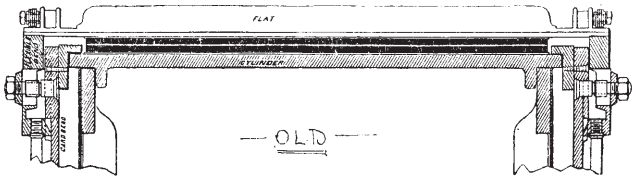


FIG. 114.

See Appendix for further illustrations.

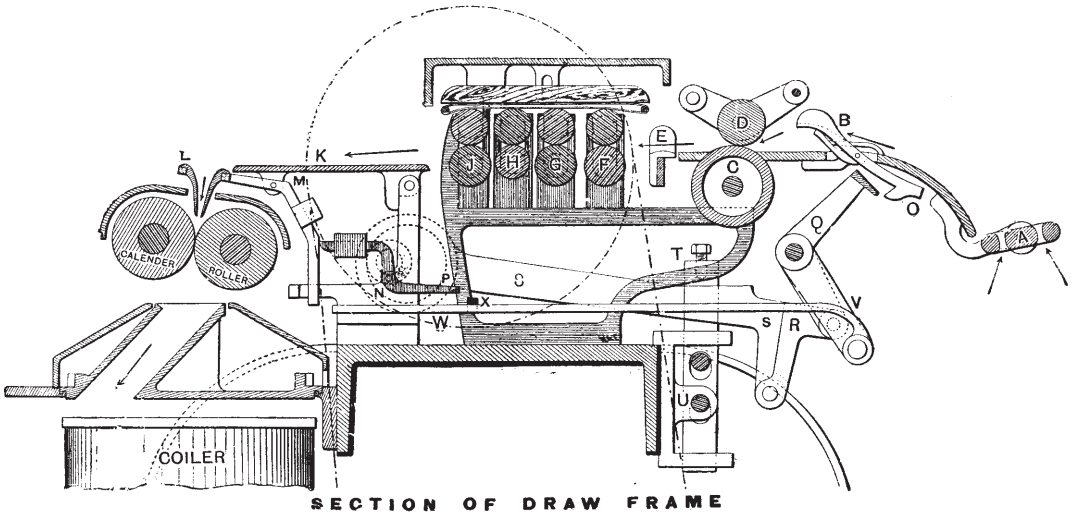


FIG. 1.

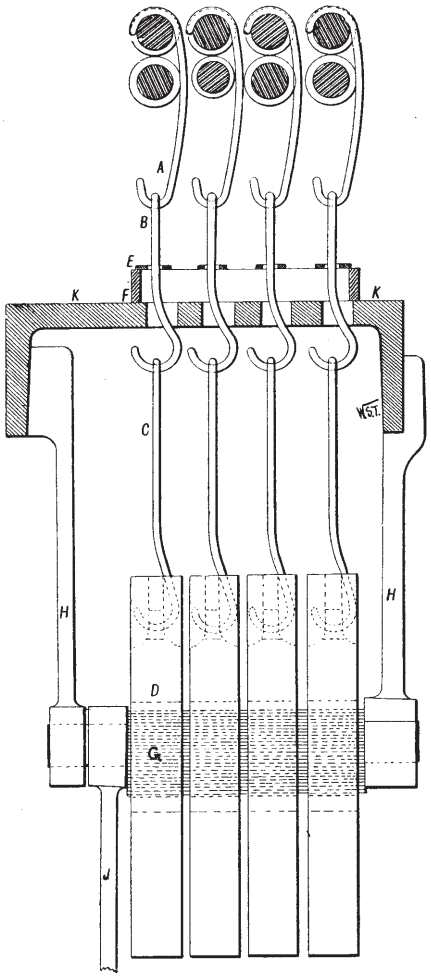
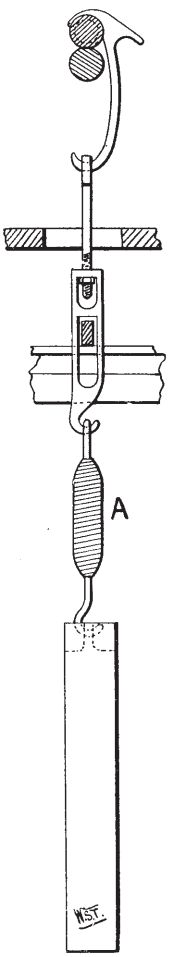


FIG. 2.



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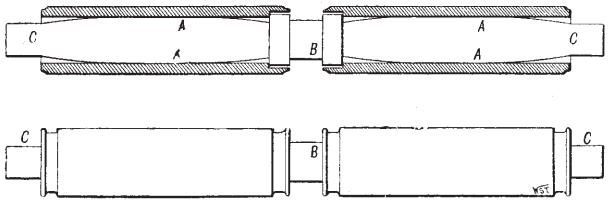

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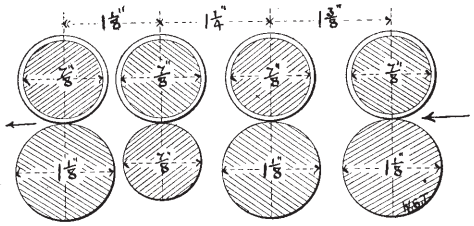

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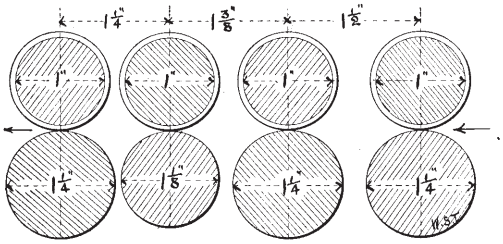

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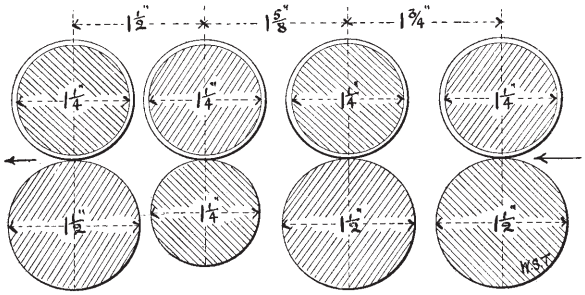

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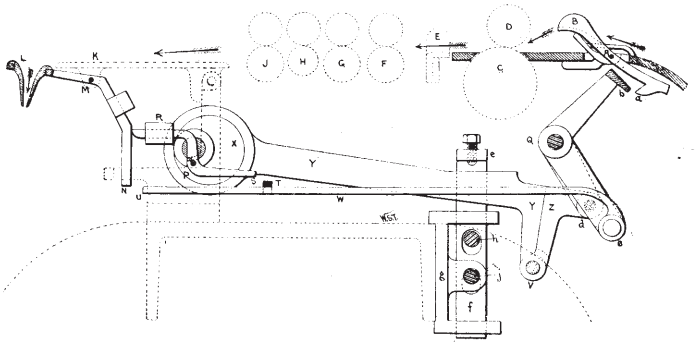

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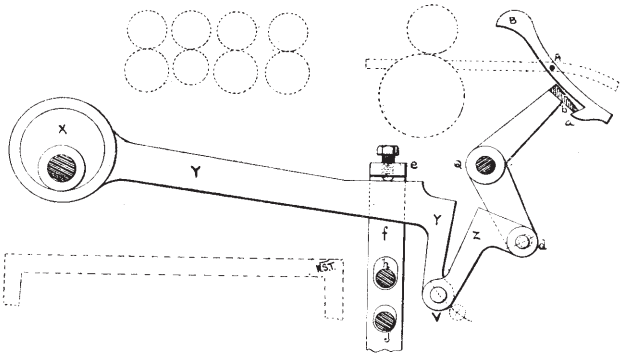

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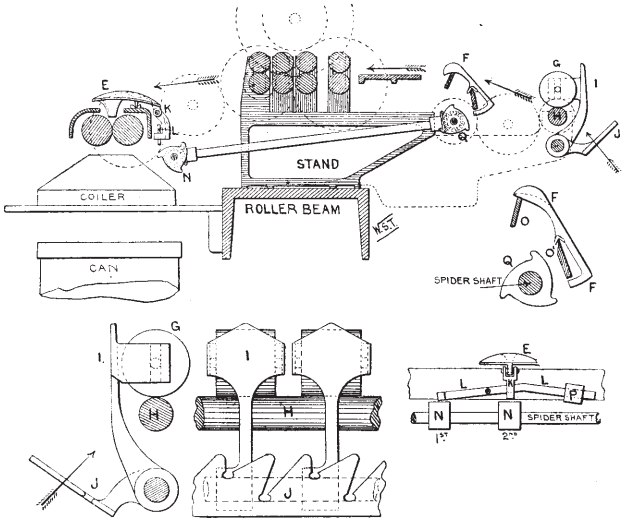


Fig. 10.

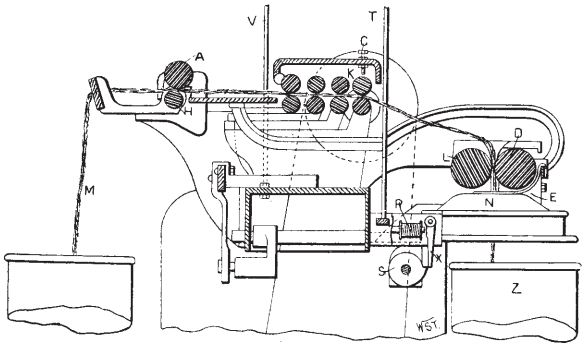


Fig. 11.

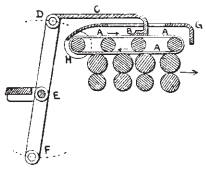
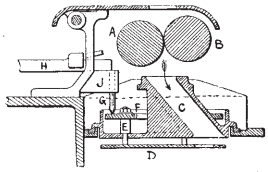


Fig. 13.



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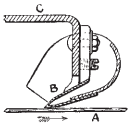

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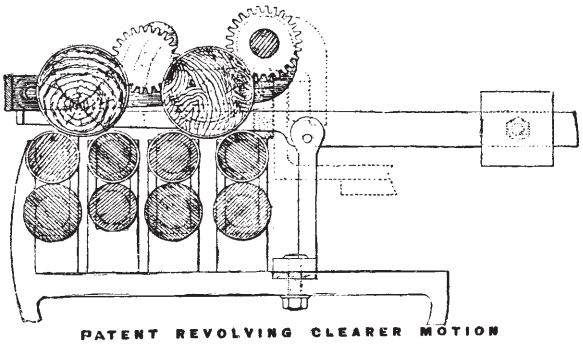
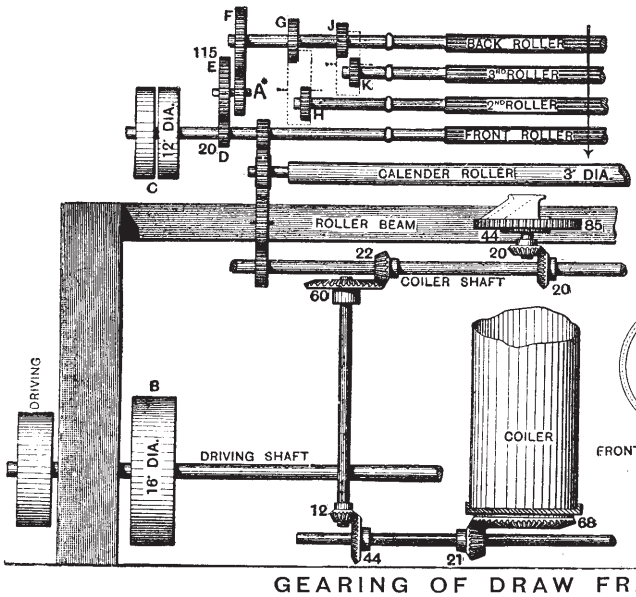


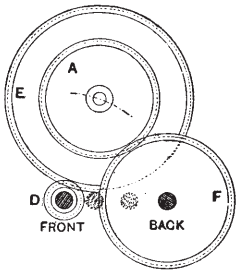
Fig. 12.

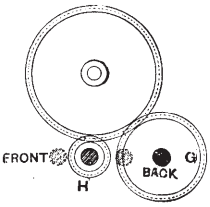


GEARING OF DRAW FRAME

Fig. 16.

Fig. 17.





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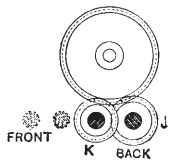

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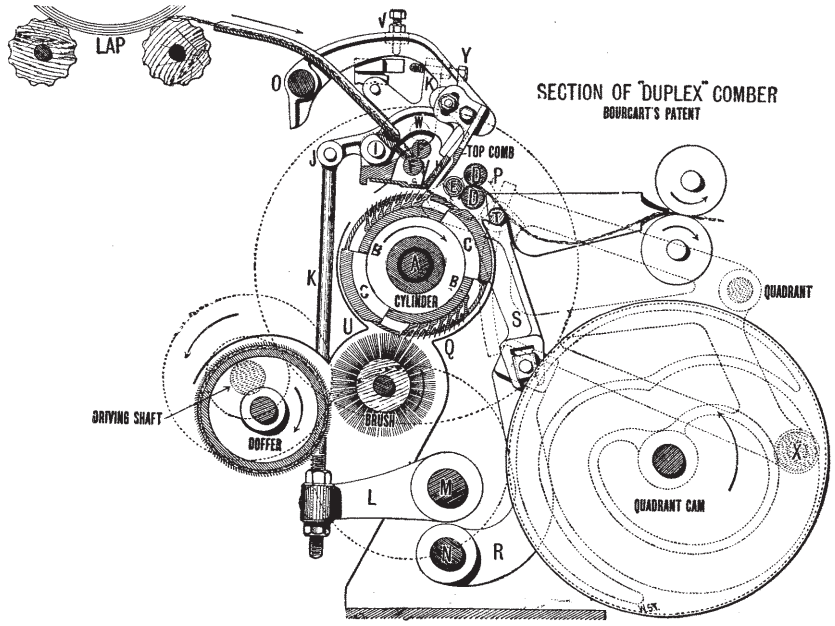

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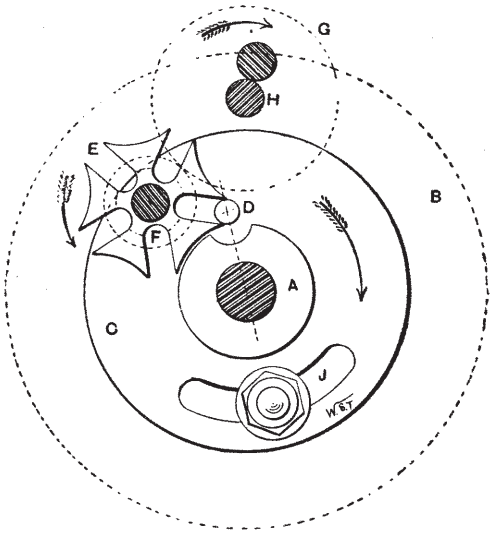

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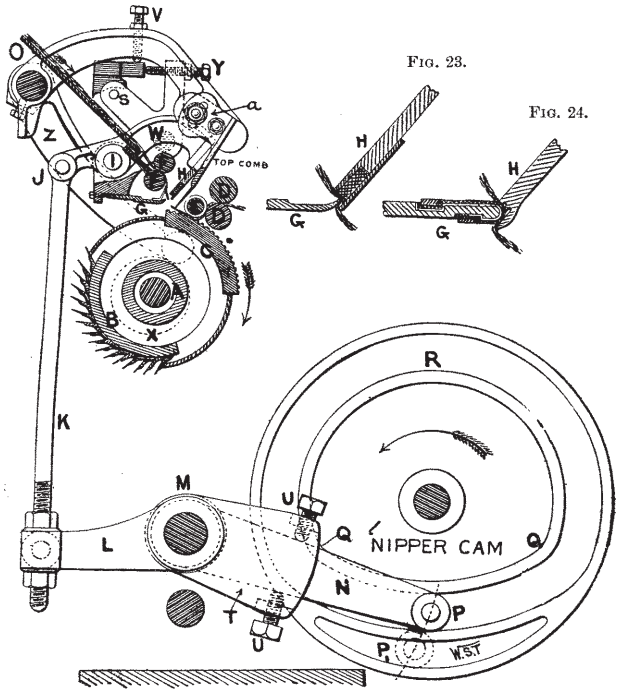
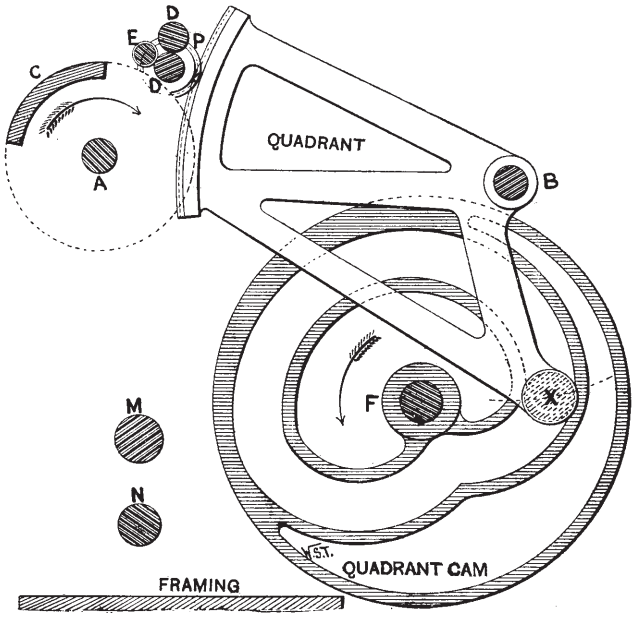


FIG. 22.

FIG. 23.

FIG. 24.



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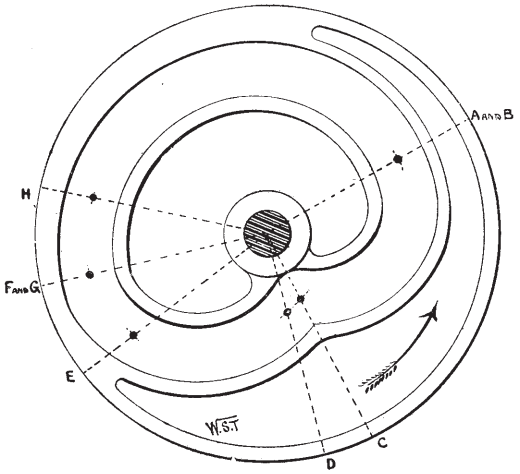

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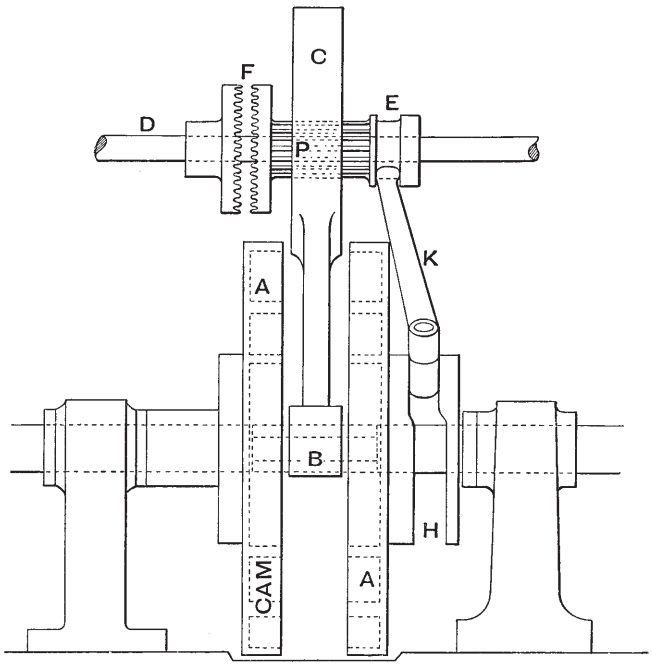

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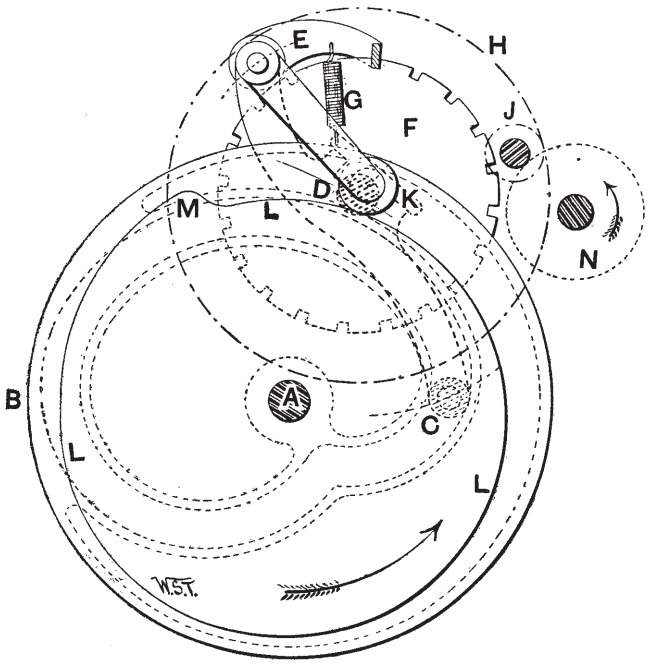
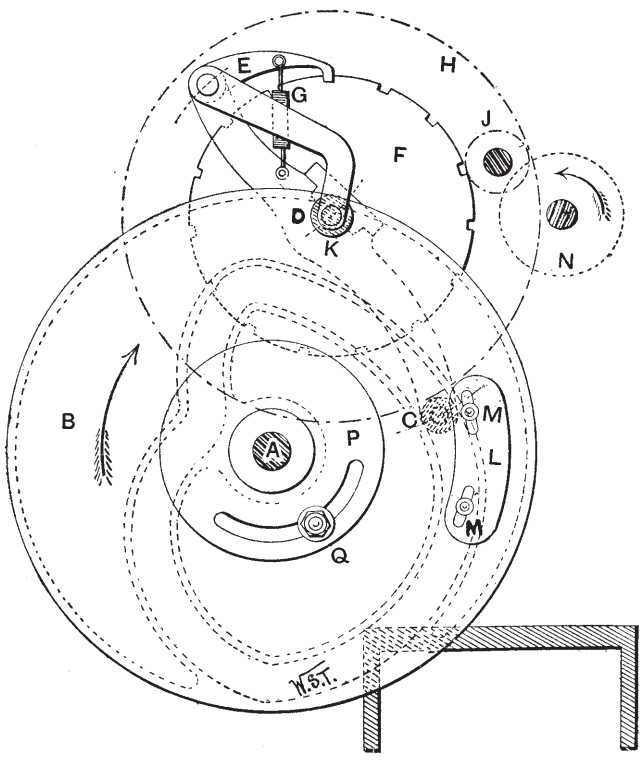


FIG. 28.



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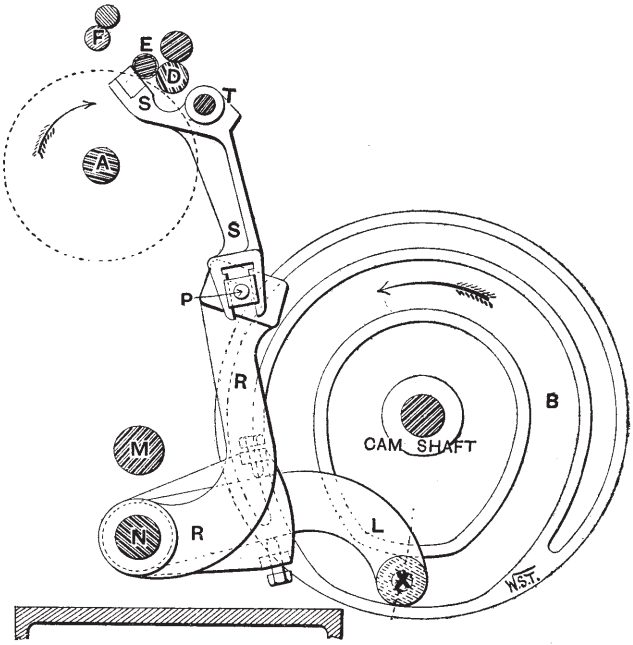

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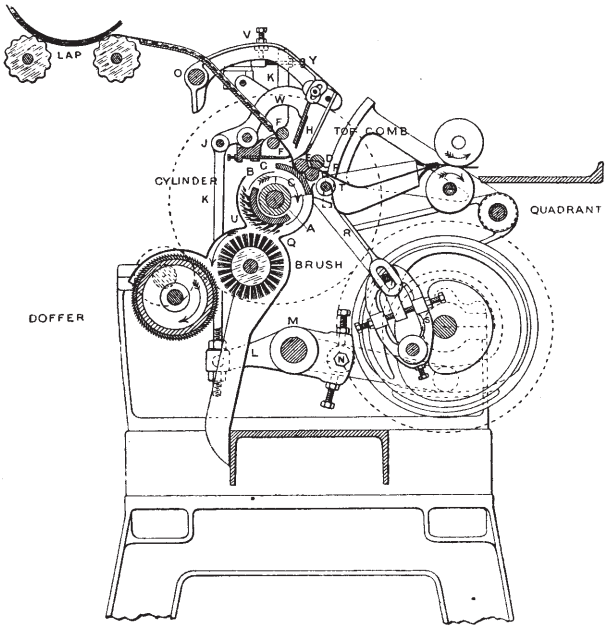

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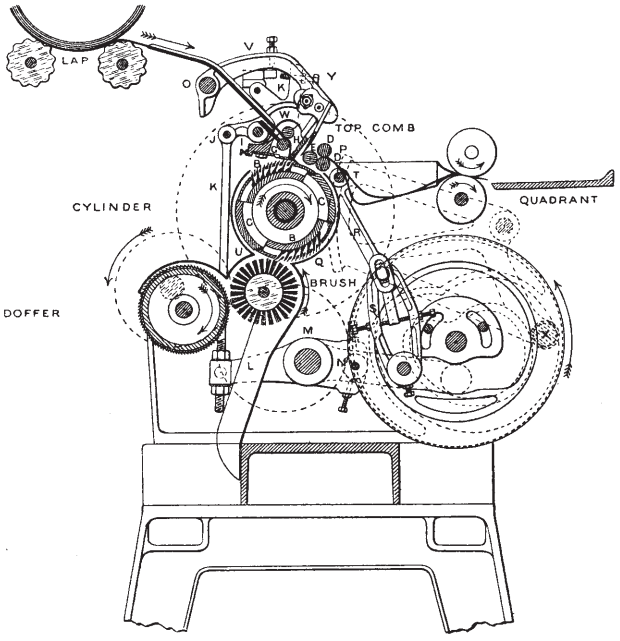


FIG. 32.

FIG. 33.

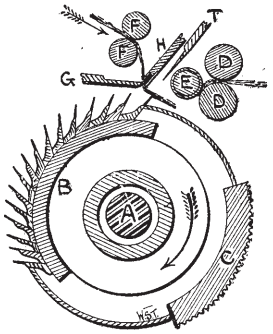
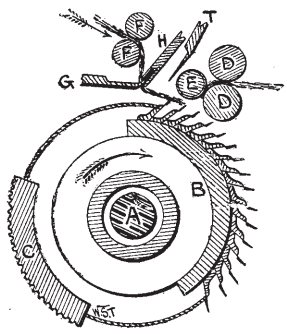
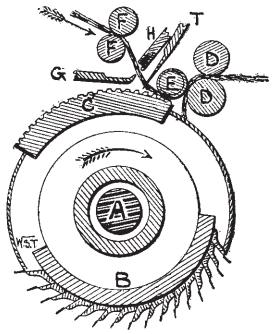


FIG. 34.





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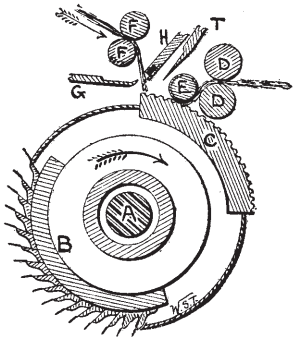

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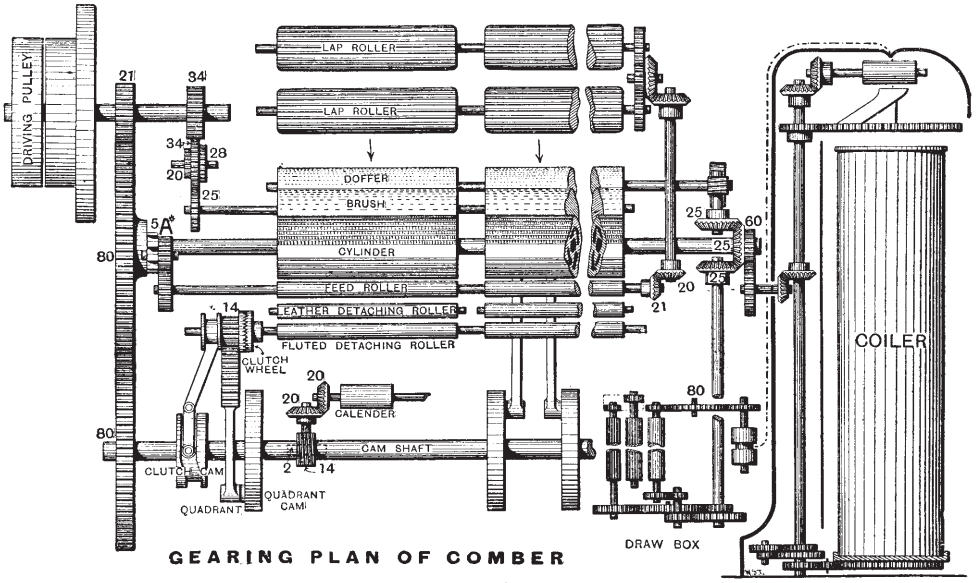

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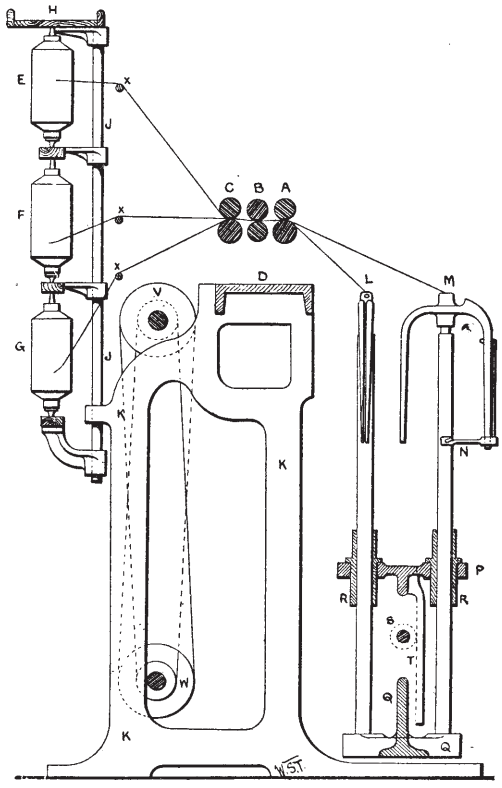

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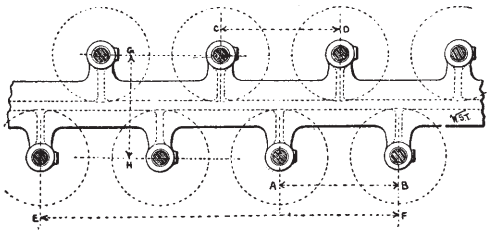

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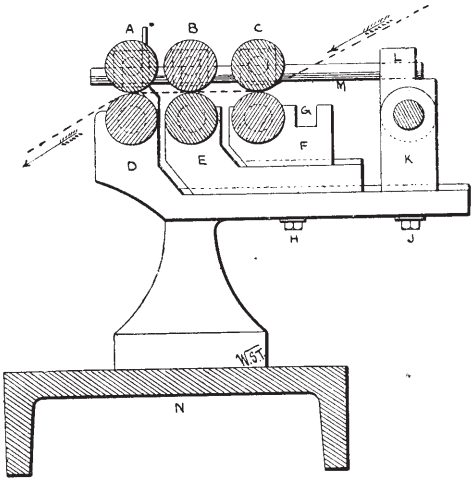

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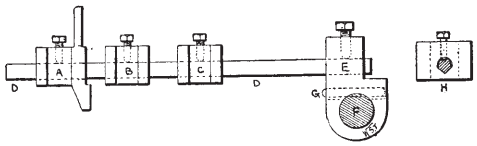

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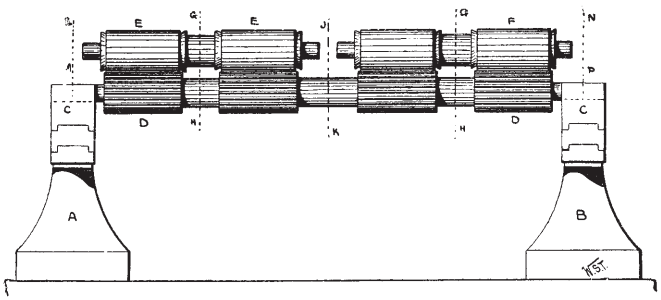

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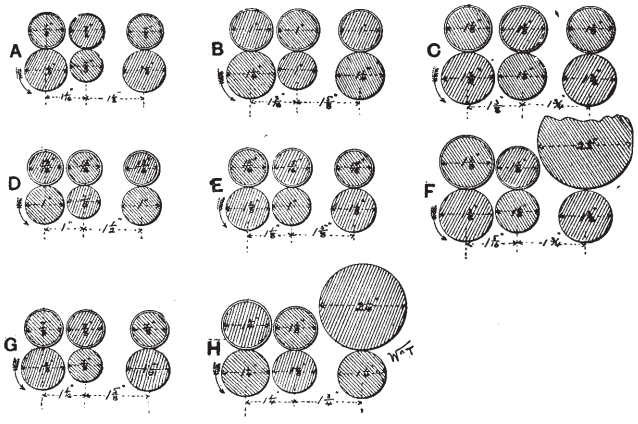


FIG. 43.

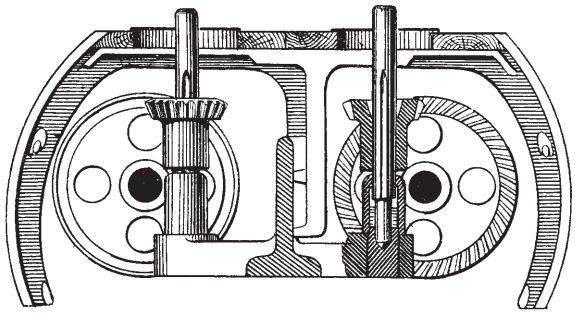


FIG. 46.

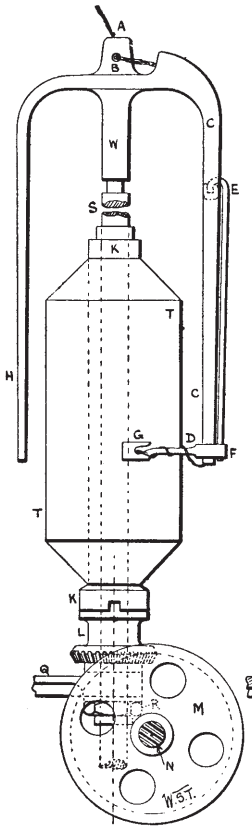
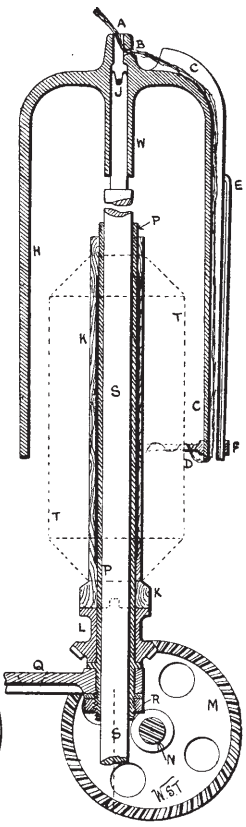


FIG. 44.



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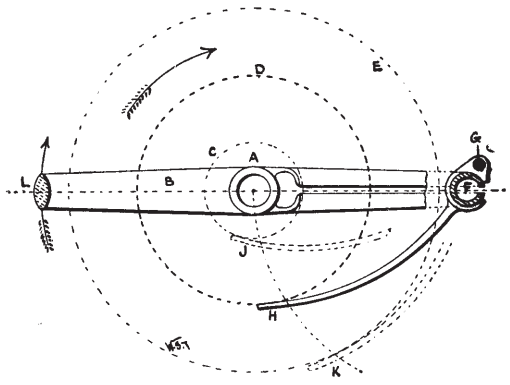

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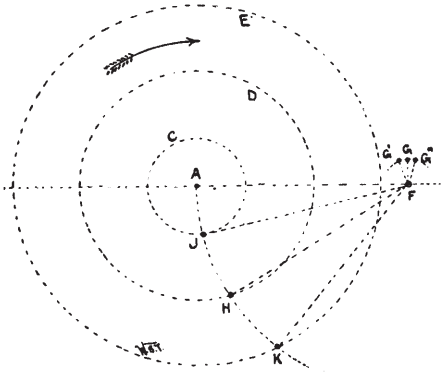

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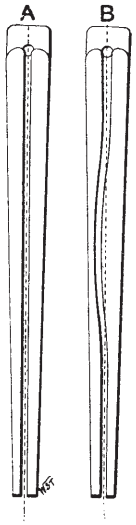

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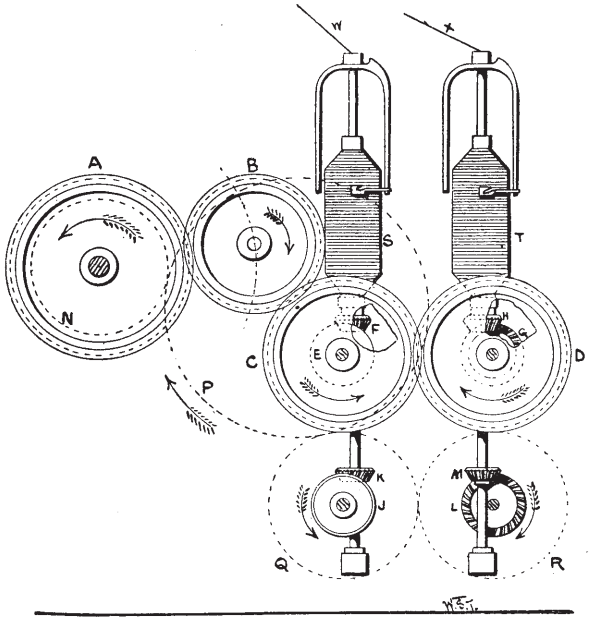

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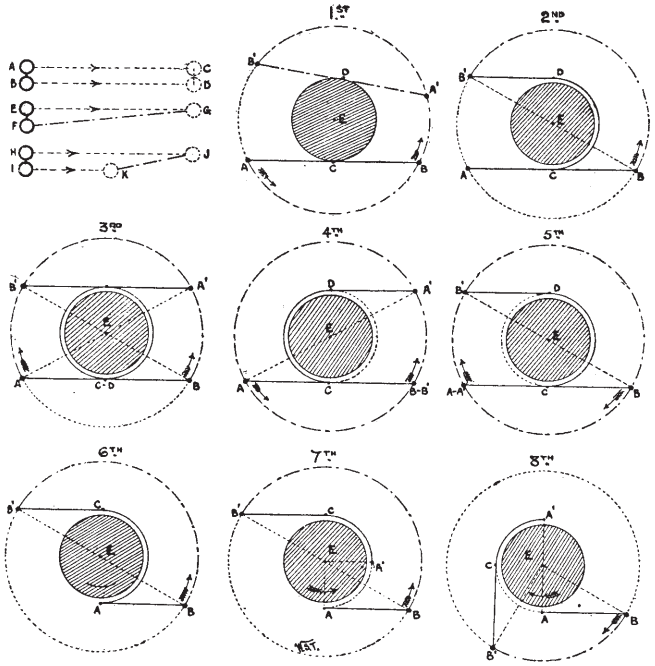

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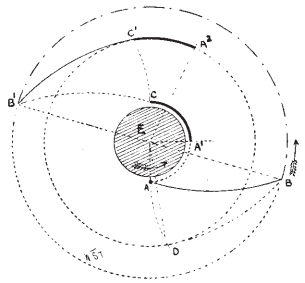


FIG. 52.

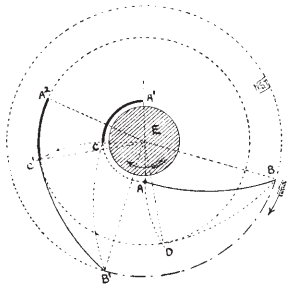


FIG. 53.

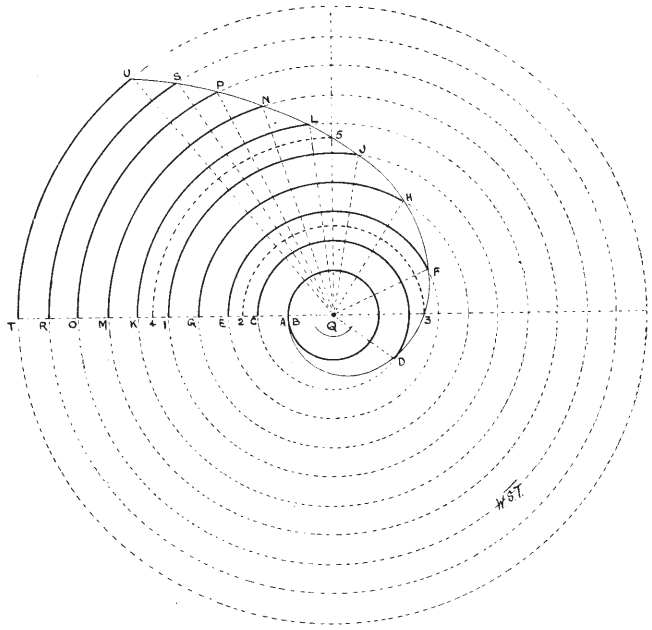


FIG. 54.

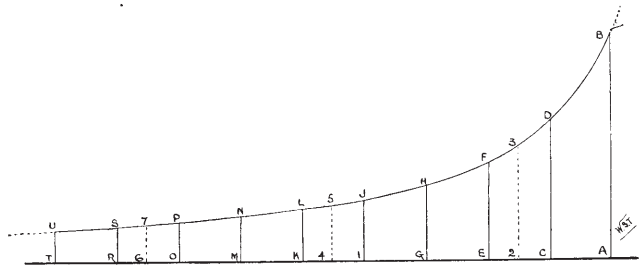


FIG. 55.

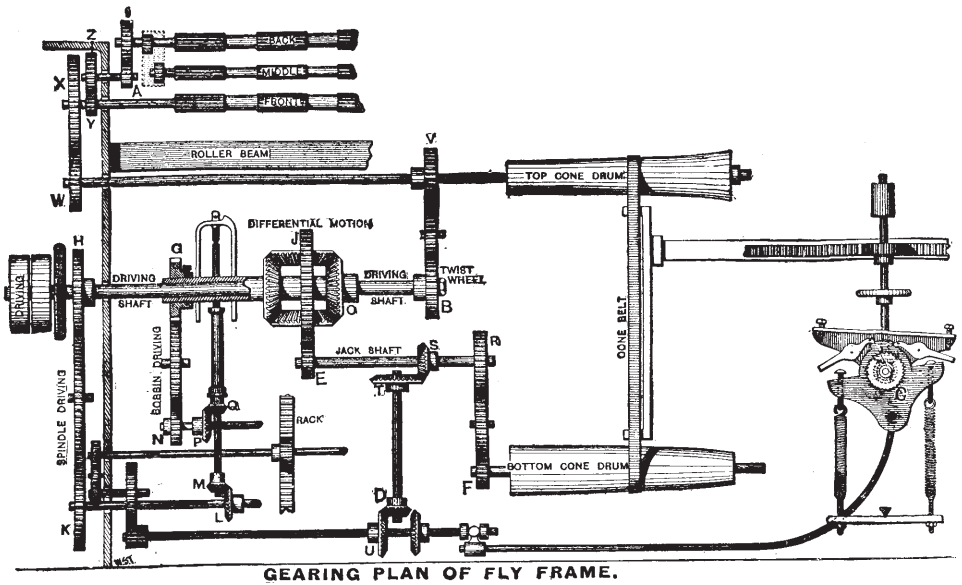


FIG. 56.

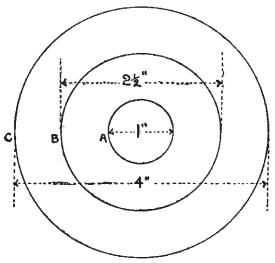


FIG. 57.

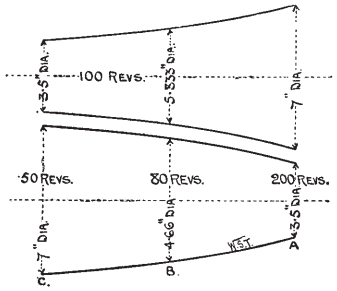


FIG. 58.

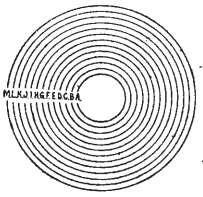


FIG. 59.

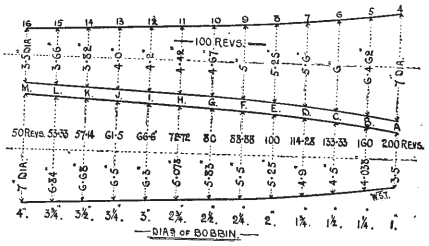


FIG. 60.

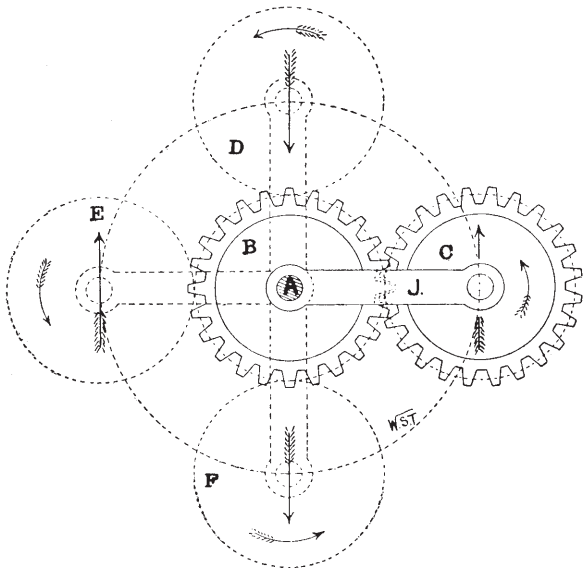


FIG. 61.

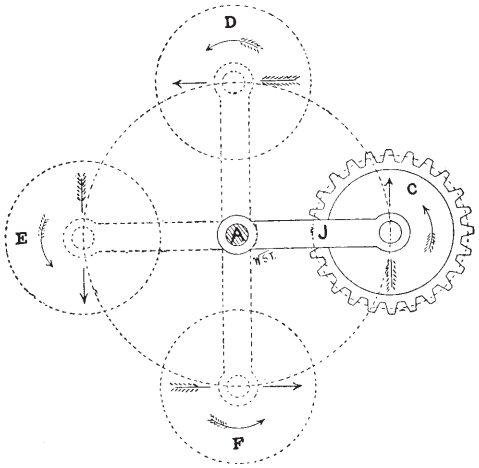


FIG. 62.

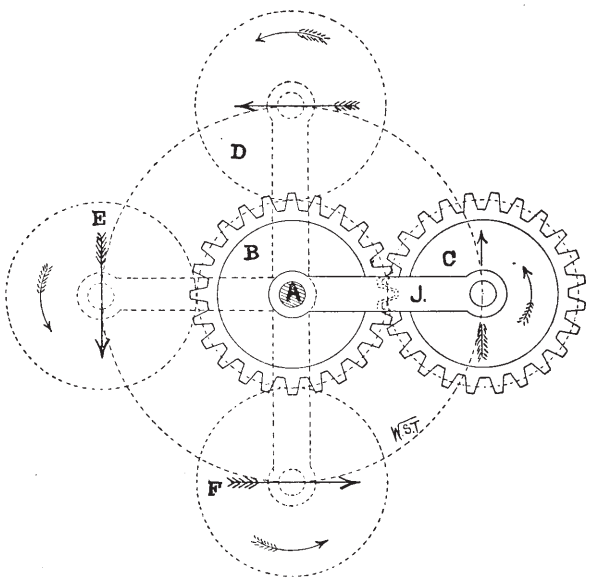


FIG. 63.

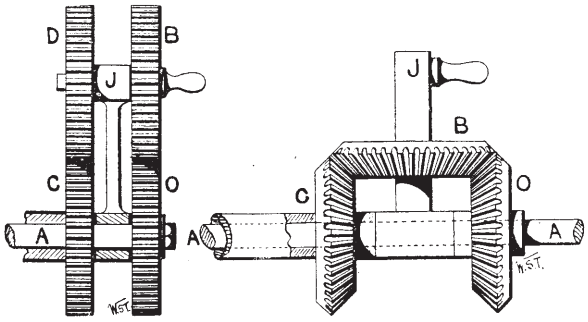


FIG. 64. FIG. 65.

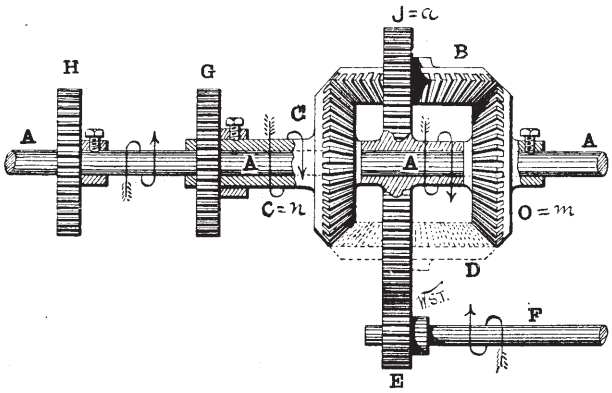


FIG. 66.

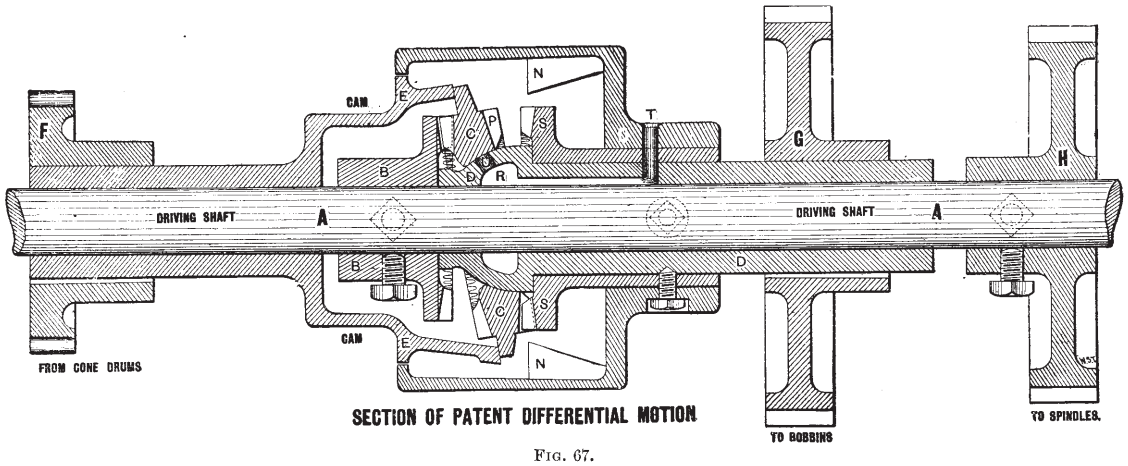


FIG. 67.

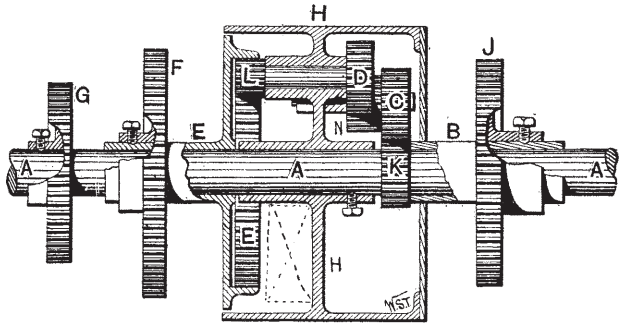


FIG. 68.

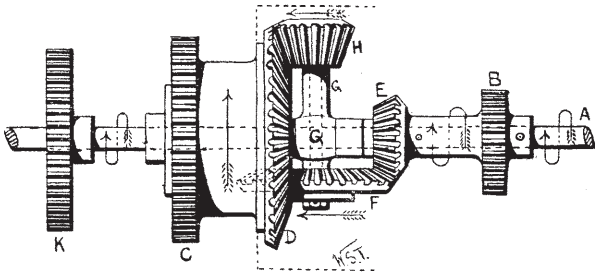


FIG. 69.

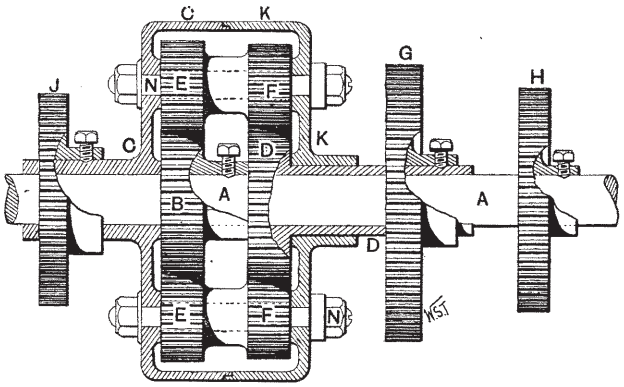


FIG. 70.

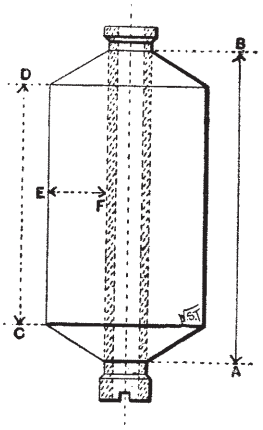
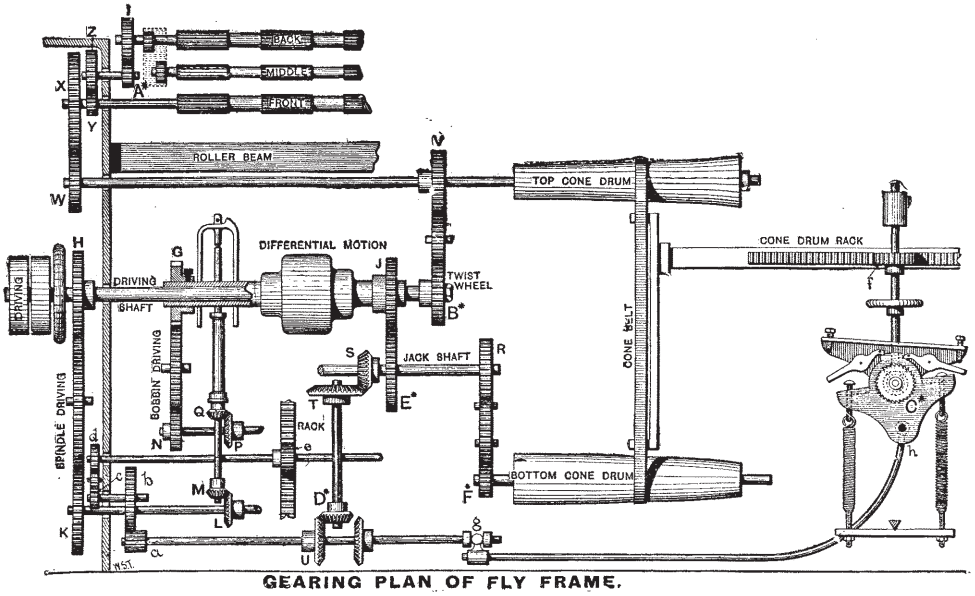


FIG. 71.



GEARING PLAN OF FLY FRAME.

FIG. 72.

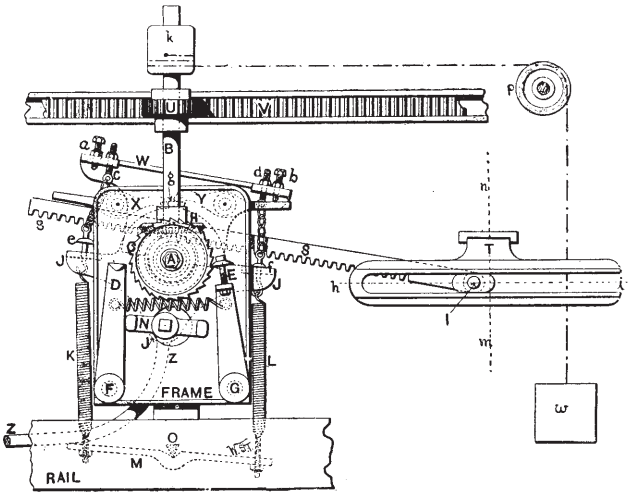


FIG. 73.

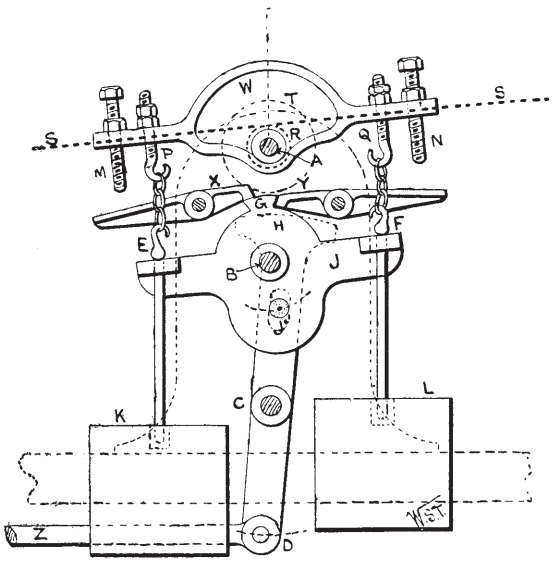


FIG. 76.

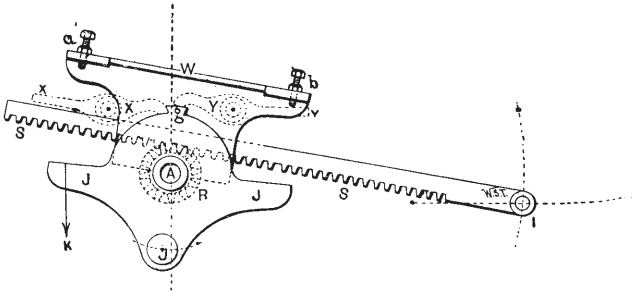


FIG. 74.

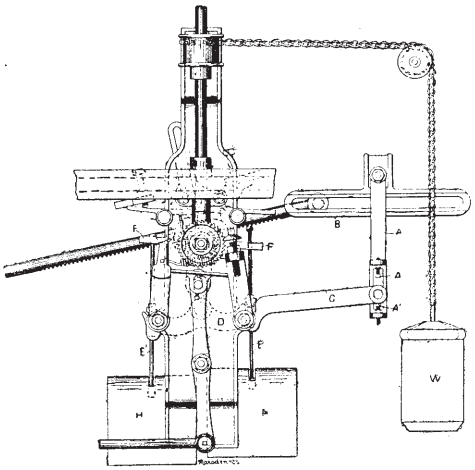


FIG. 77.

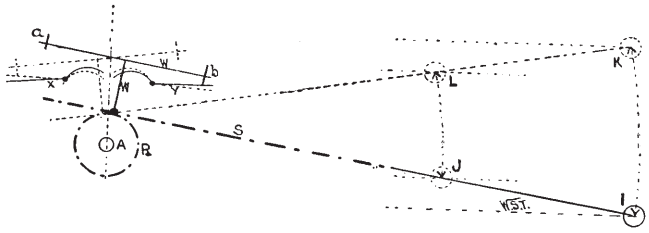


FIG. 75.

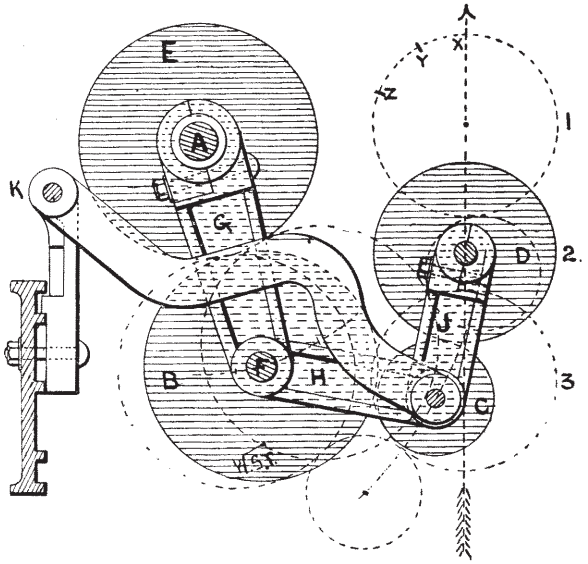


FIG. 78.

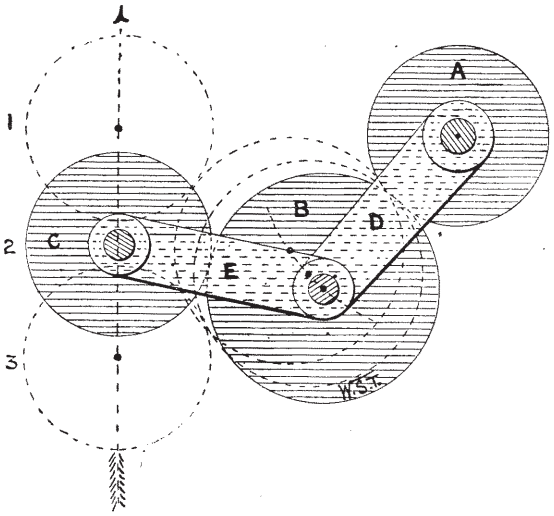
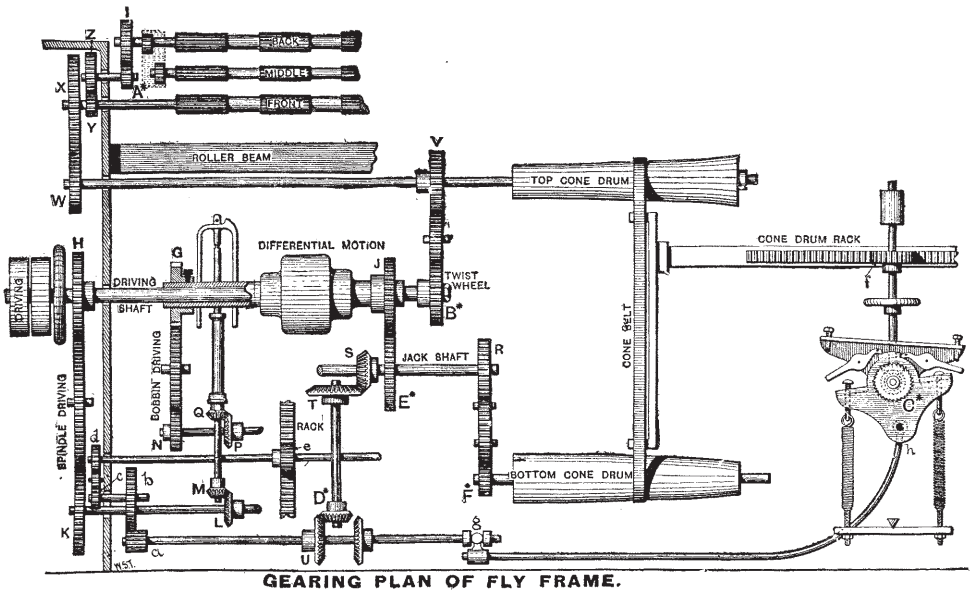


FIG. 79.



GEARING PLAN OF FLY FRAME.

FIG. 80.

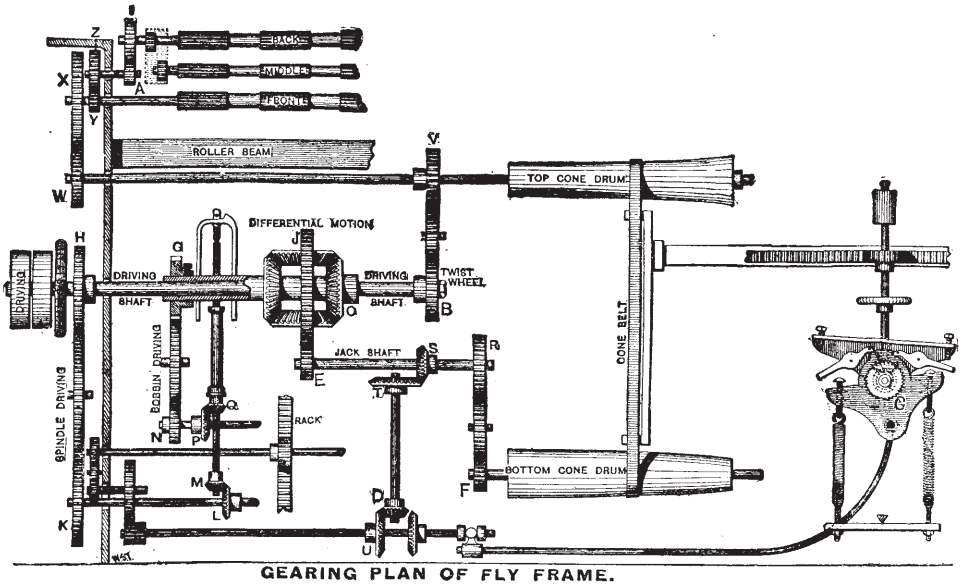

BACK
MIDDLE
FRONT
ROLLER BEAM
TOP CONE DRUM
DIFFERENTIAL MOTION
DRIVING SHAFT
TWIST WHEEL
JACK SHAFT
CONE BELT
BOBBIN DRIVING
SPINDLE DRIVING
RACK
BOTTOM CONE DRUM
GEARING PLAN OF FLY FRAME.

FIG. 81.

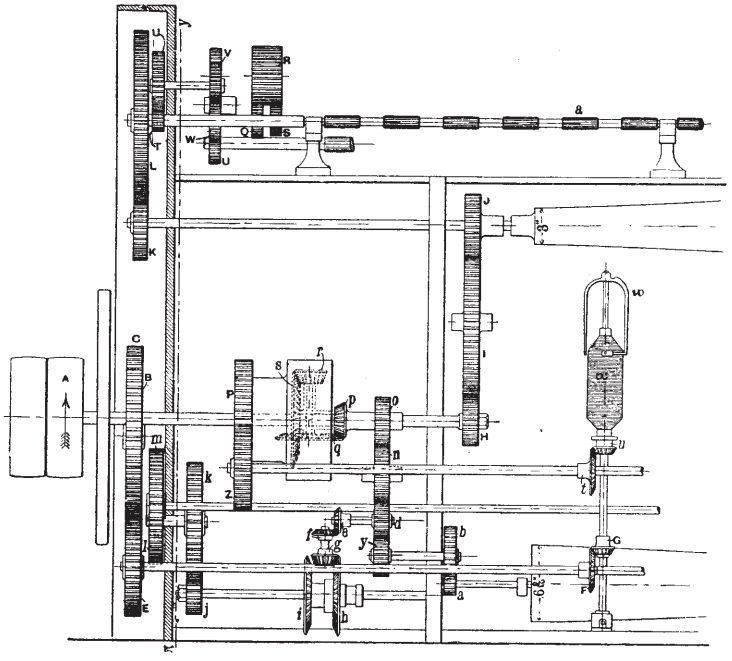


FIG. 82.

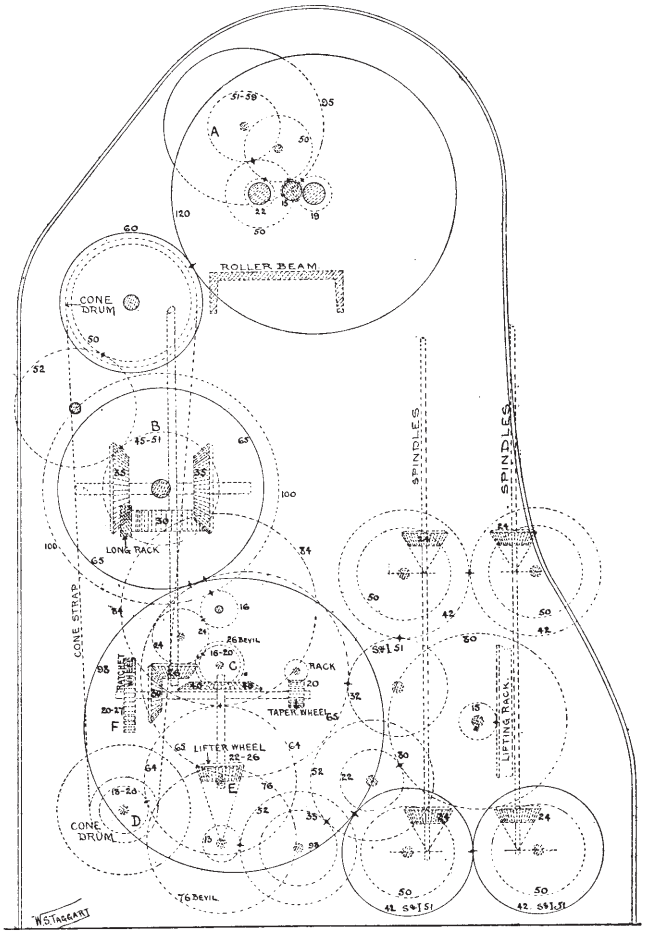

ROLLER BEAM
CONE DRUM
LONG RACK
CONE STRAP
SPINDLES
SPINDLES
RACK
TAPER WHEEL
LIFTER WHEEL
LIFTING RACK
CONE DRUM
76 DEVIL
W. S. TAGGART

FIG. 83.

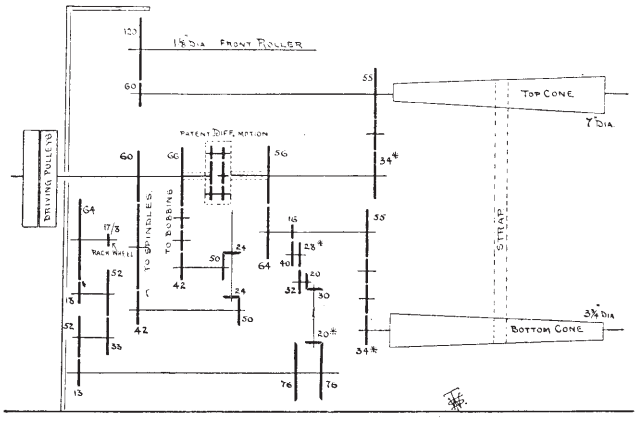

18 DIA FRONT ROLLER
TOP CONE
7" DIA.
PATENT DIFF. MOTION
DRIVING PULLEYS
TO SPINDLES.
TO BOBBINS
STRAP
BOTTOM CONE
3¾" DIA

FIG. 84.

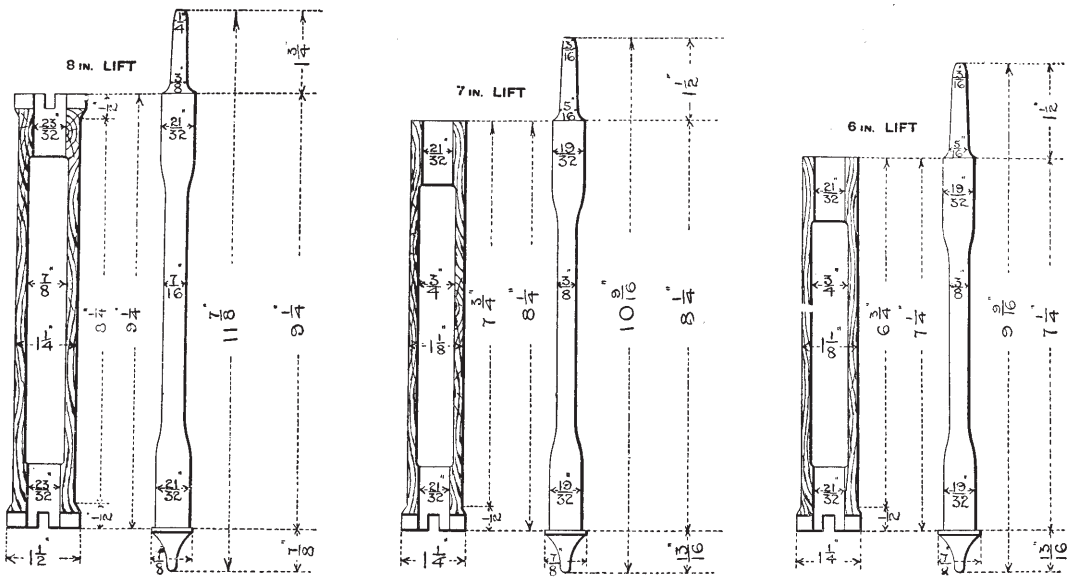


FIG. 85.

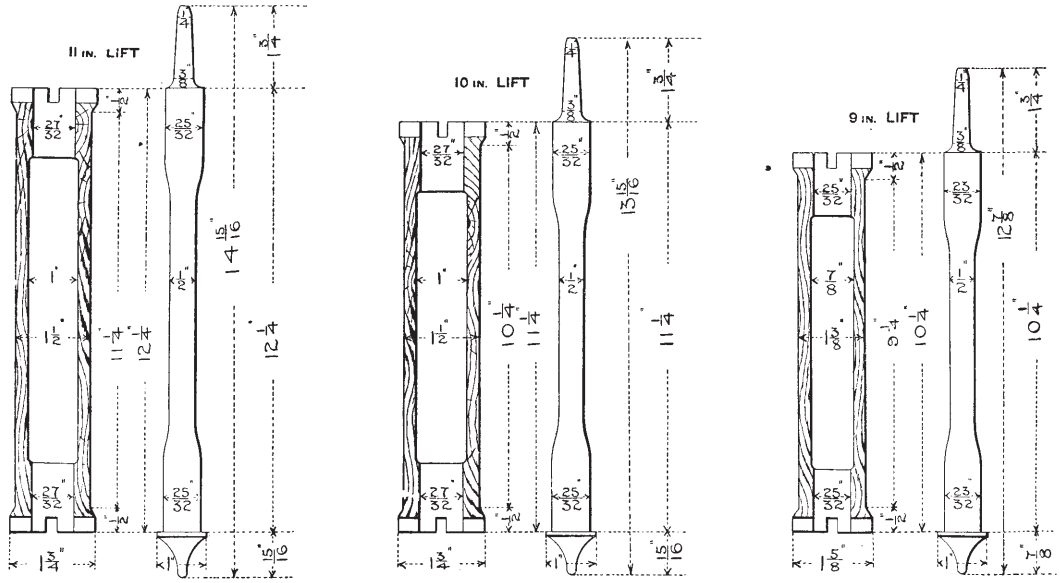


FIG. 86.

See Appendix for further illustrations.

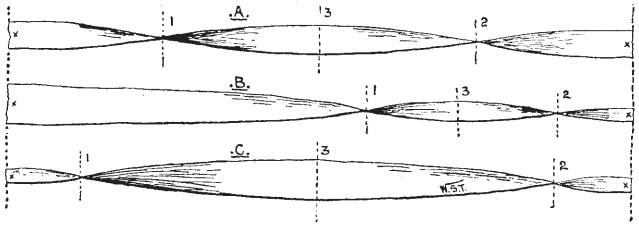


FIG. 1.

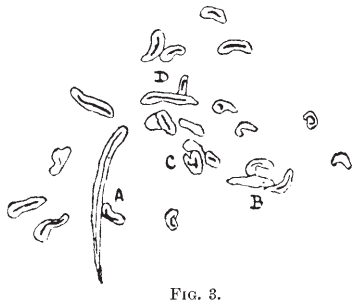


FIG. 3.

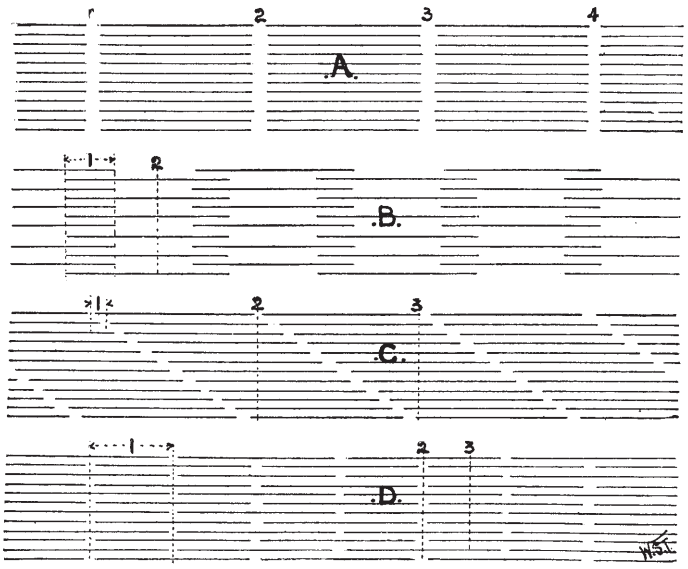


FIG. 2.

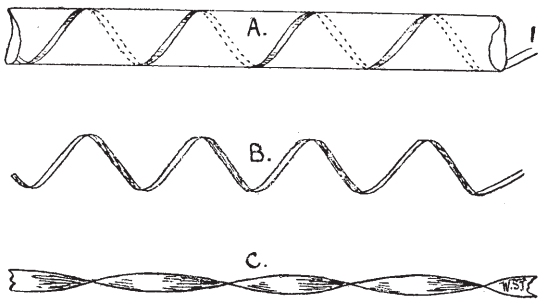


FIG. 4.

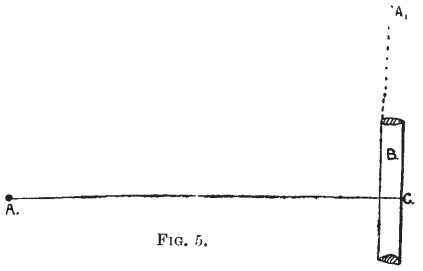


FIG. 5.

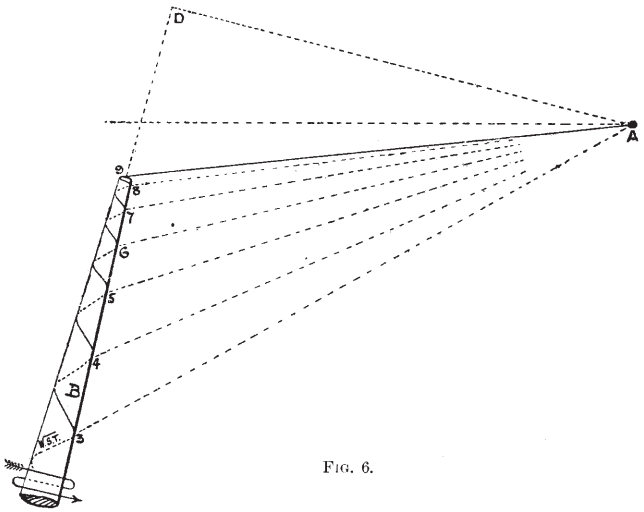
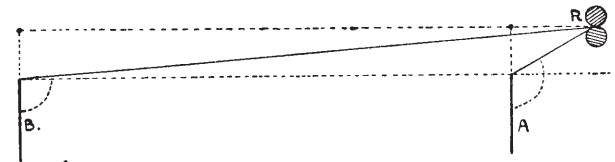


FIG. 6.

FIG. 7.



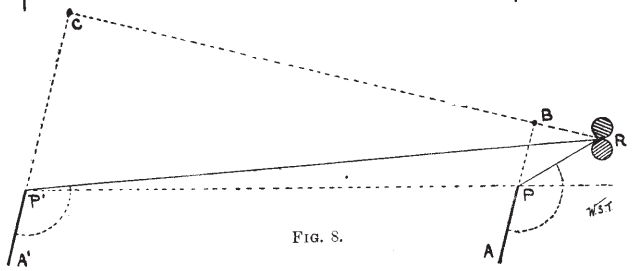


FIG. 8.

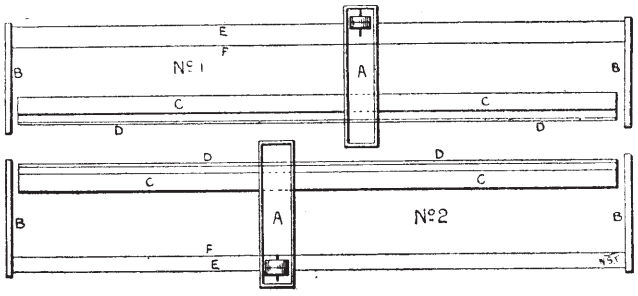


FIG. 9.

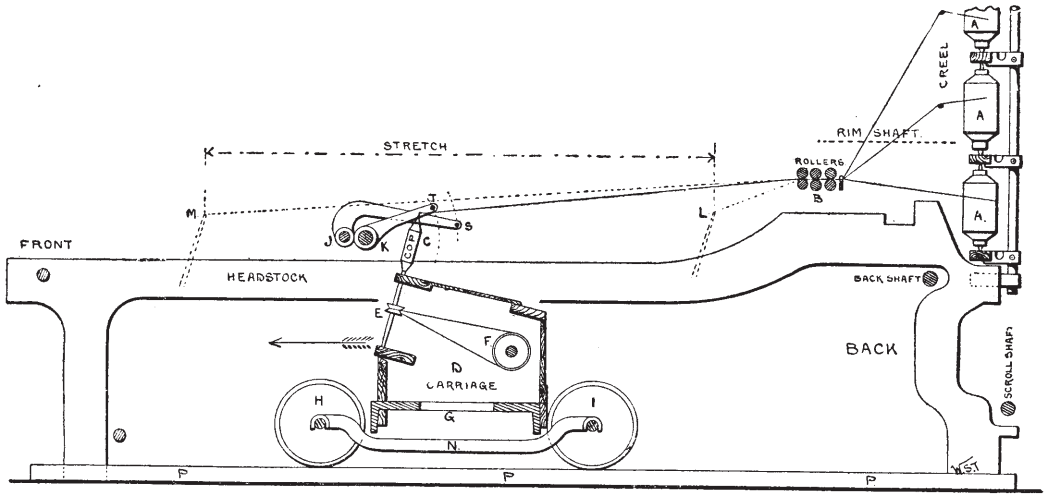
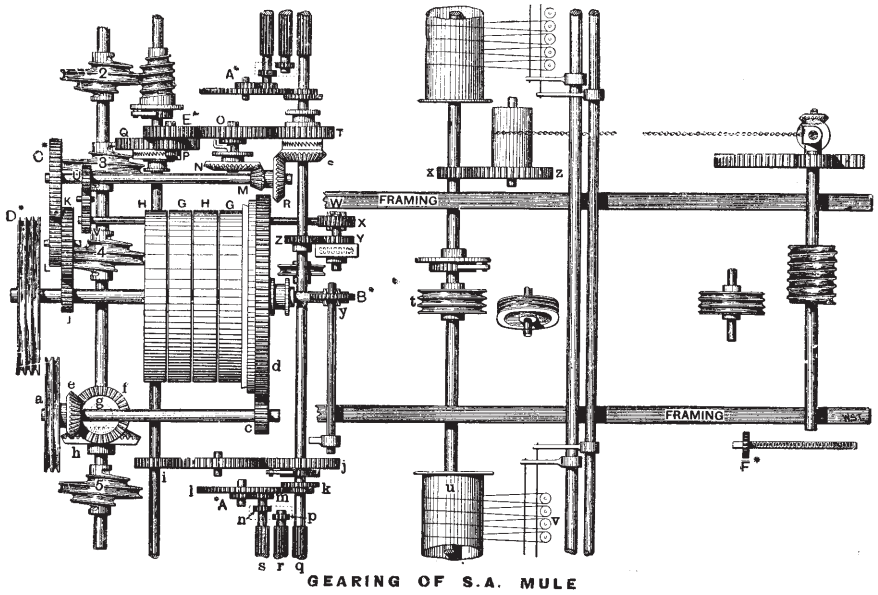


FIG. 10.



GEARING OF S.A. MULE

FIG. 11.

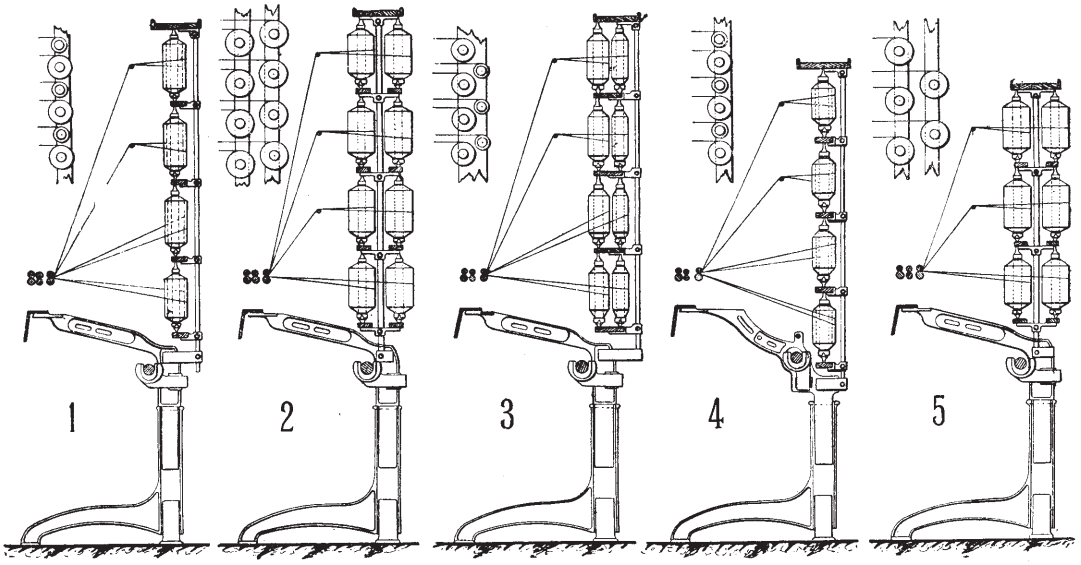


FIG. 12.

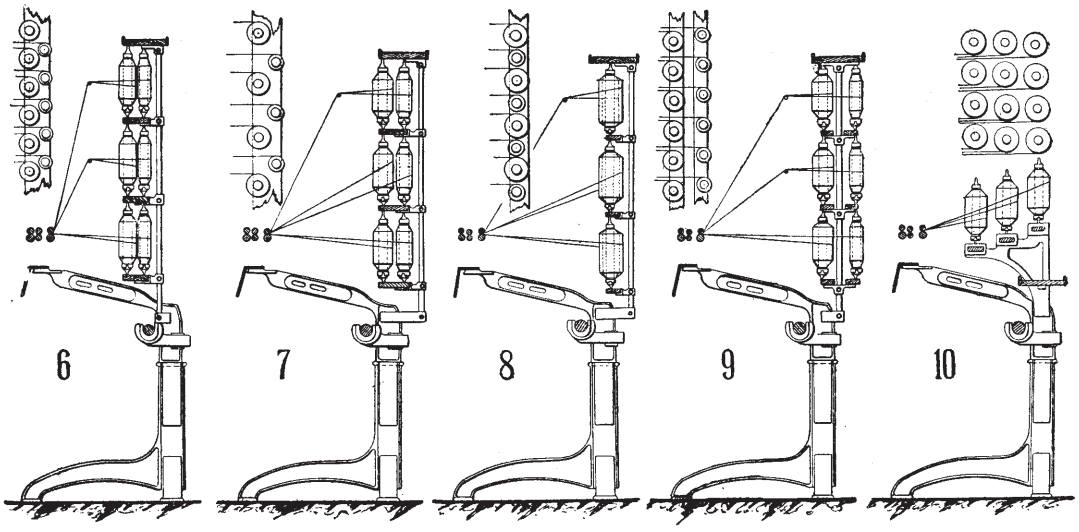


FIG. 13.

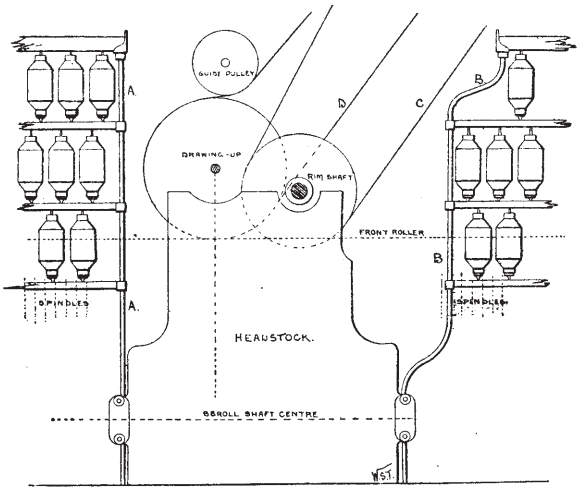


FIG. 14.

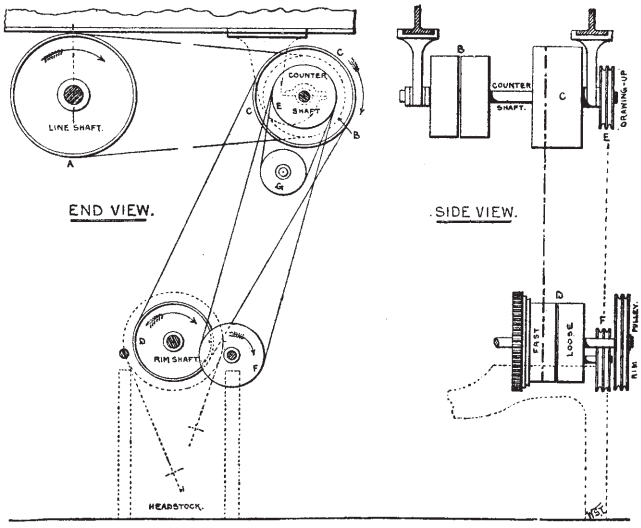


FIG. 15.

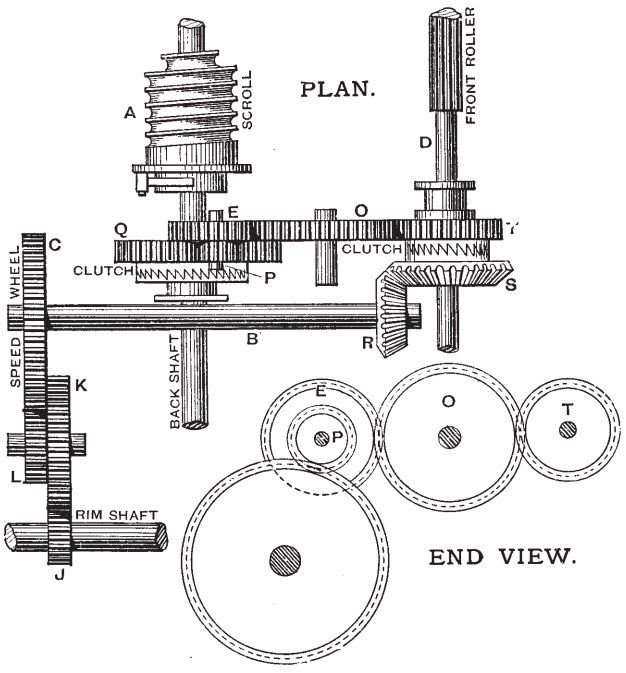


FIG. 16.

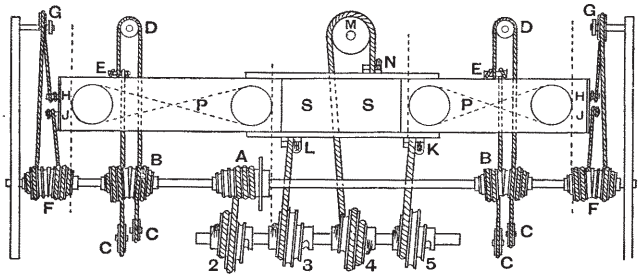


FIG. 17.

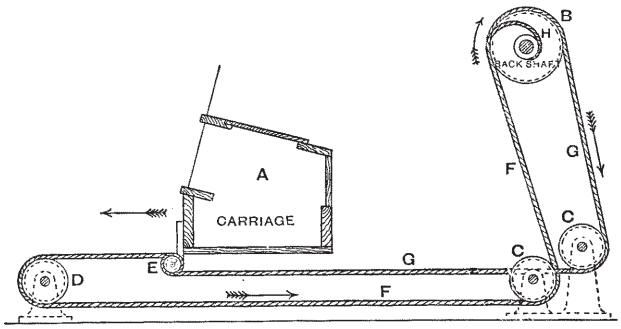


FIG. 18.

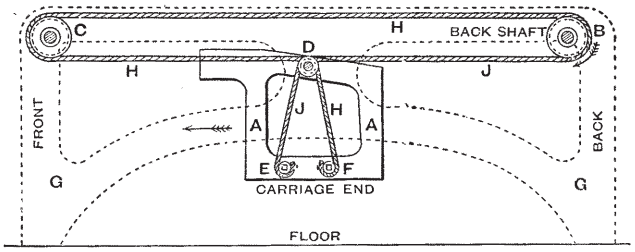


FIG. 19.

FIG. 20.

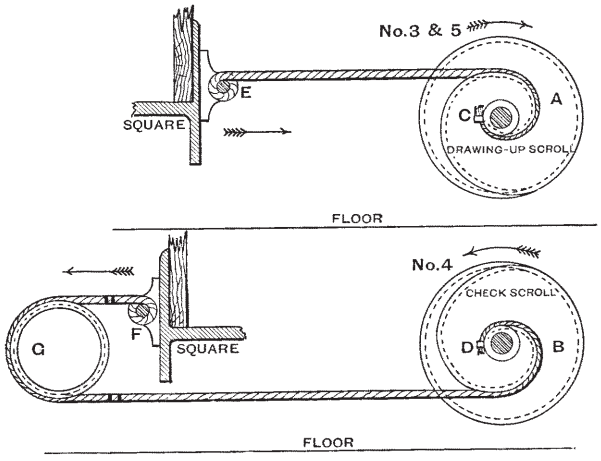


FIG. 21.

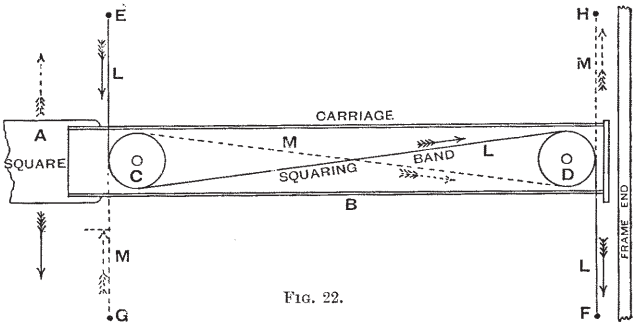


FIG. 22.

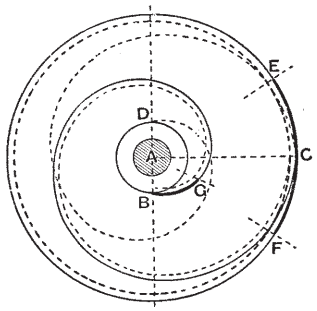


FIG. 23.

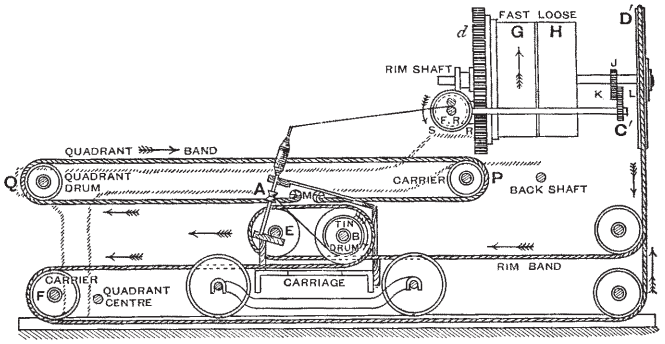


FIG. 27.

FIG. 24.

FIG. 25.

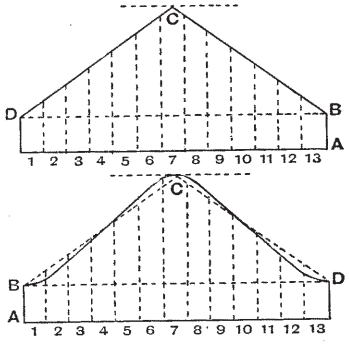


FIG. 26.

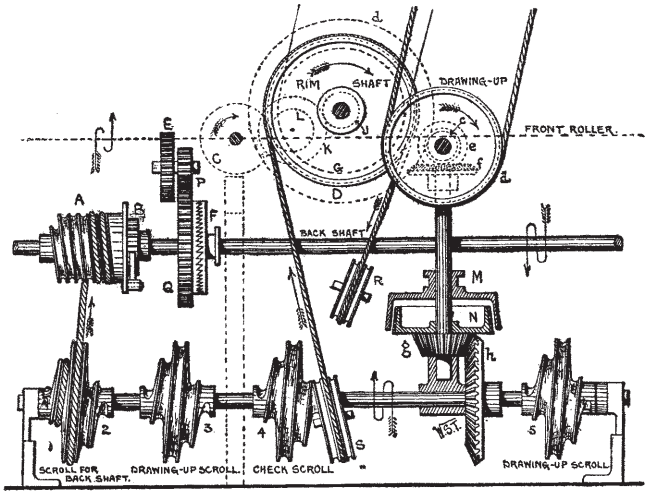


FIG. 28.

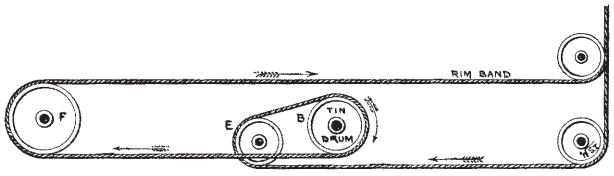


FIG. 29.

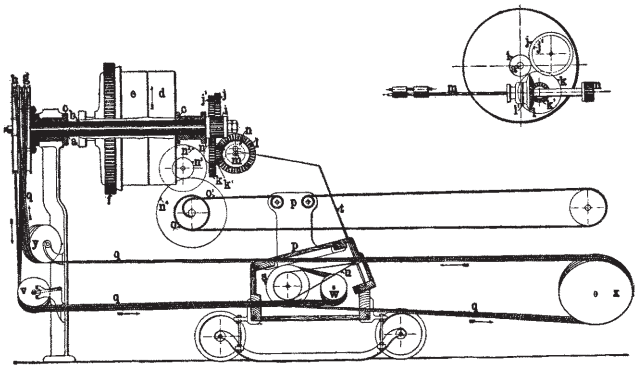
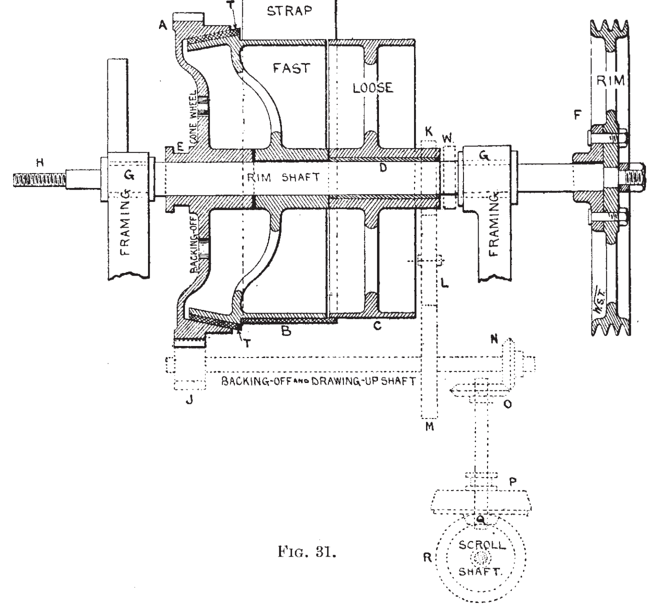


FIG. 30.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FAST
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CONE WHEEL
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RIM SHAFT
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FRAMING
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BACKING-OFF AND DRAWING-UP SHAFT
J
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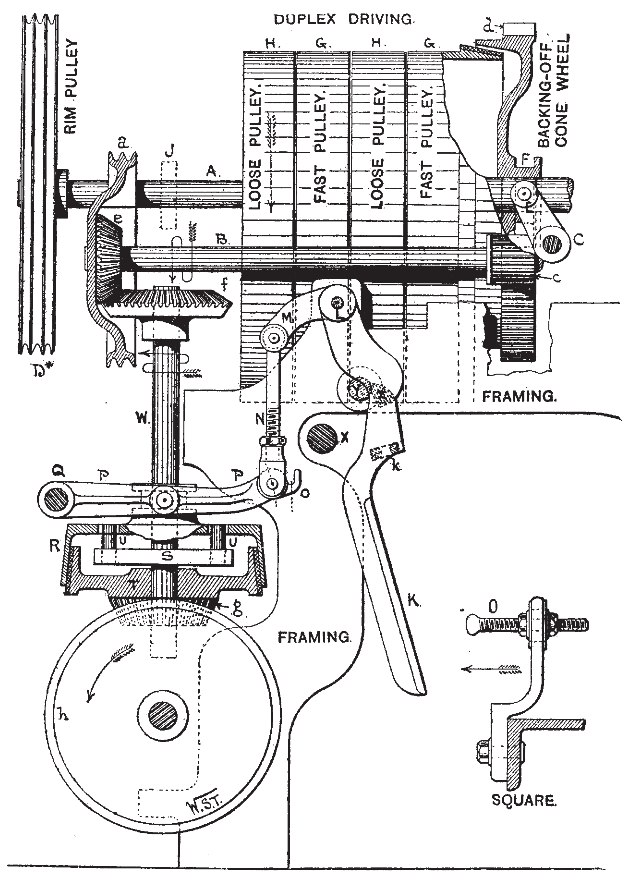
SCROLL
SHAFT

Fig. 31.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H.
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RIM PULLEY
LOOSE PULLEY.
FAST PULLEY.
LOOSE PULLEY.
FAST PULLEY.
BACKING-OFF. CONE WHEEL
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K.
FRAMING.
SQUARE.

Fig. 32.

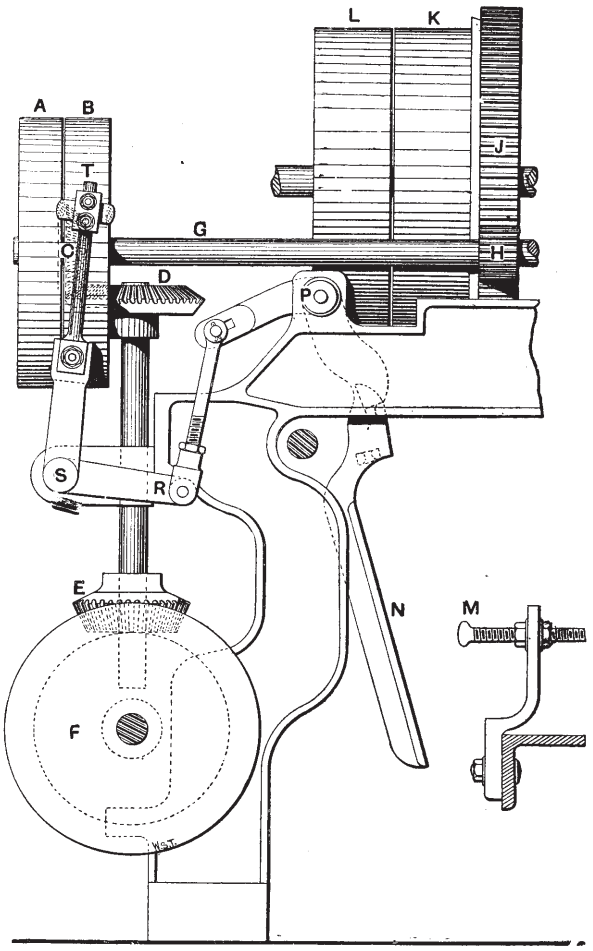


FIG. 33.

FIG. 35.

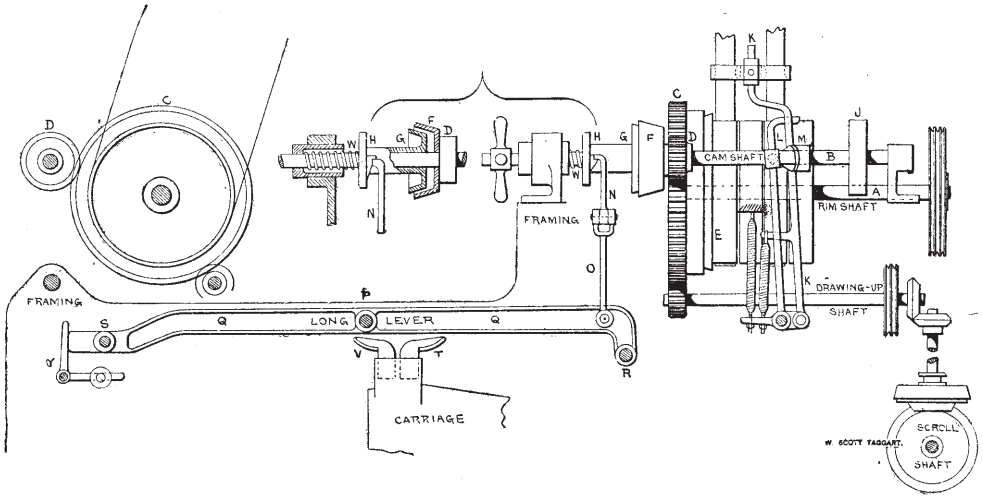


FIG. 34.

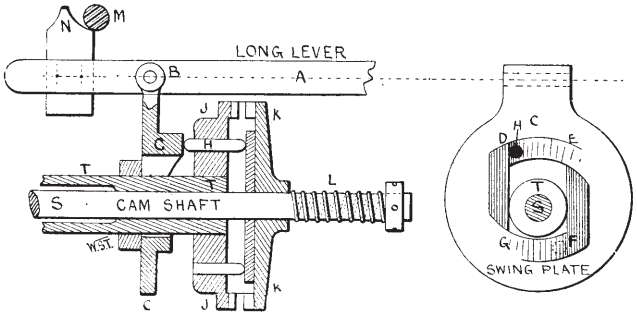


FIG. 36.

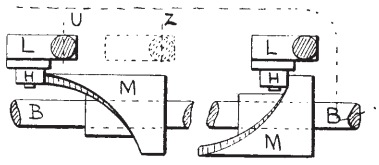


FIG. 37.

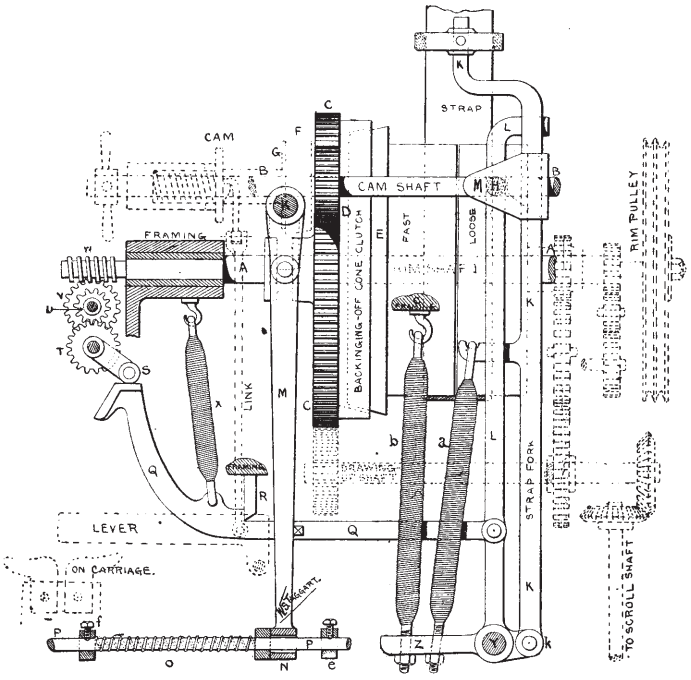


FIG. 38.

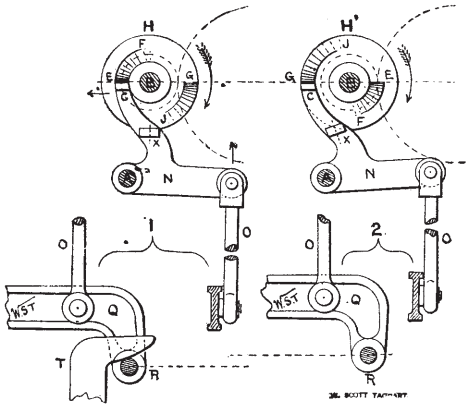


FIG. 39.

FIG. 40.

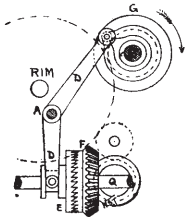
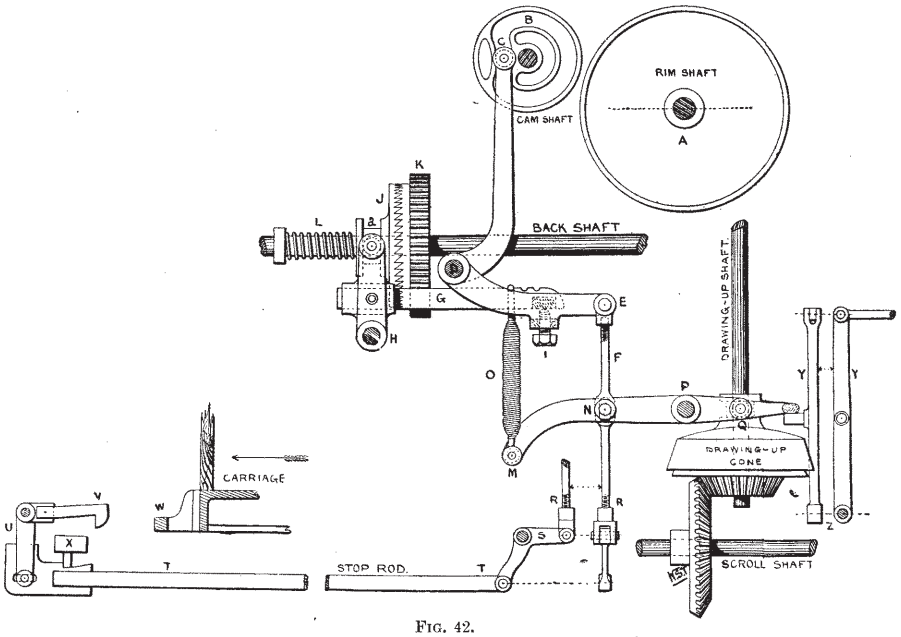


FIG. 41.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RIM SHAFT
CAM SHAFT
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DRAWING-UP SHAFT
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SCROLL SHAFT

FIG. 42.

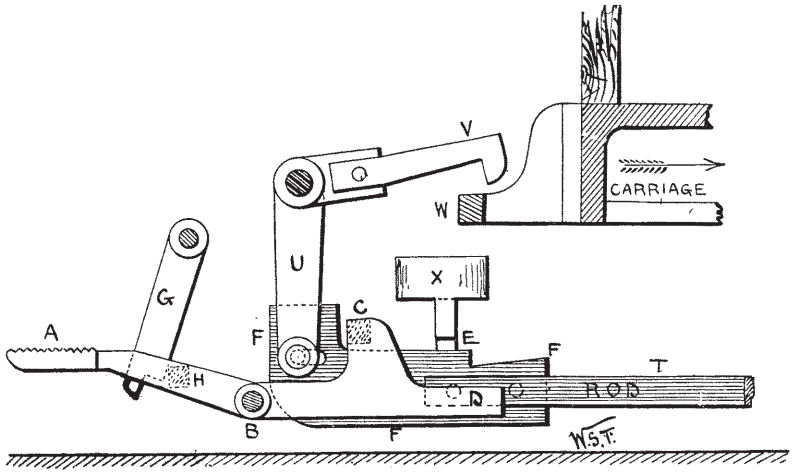
V
CARRIAGE
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FIG. 43.

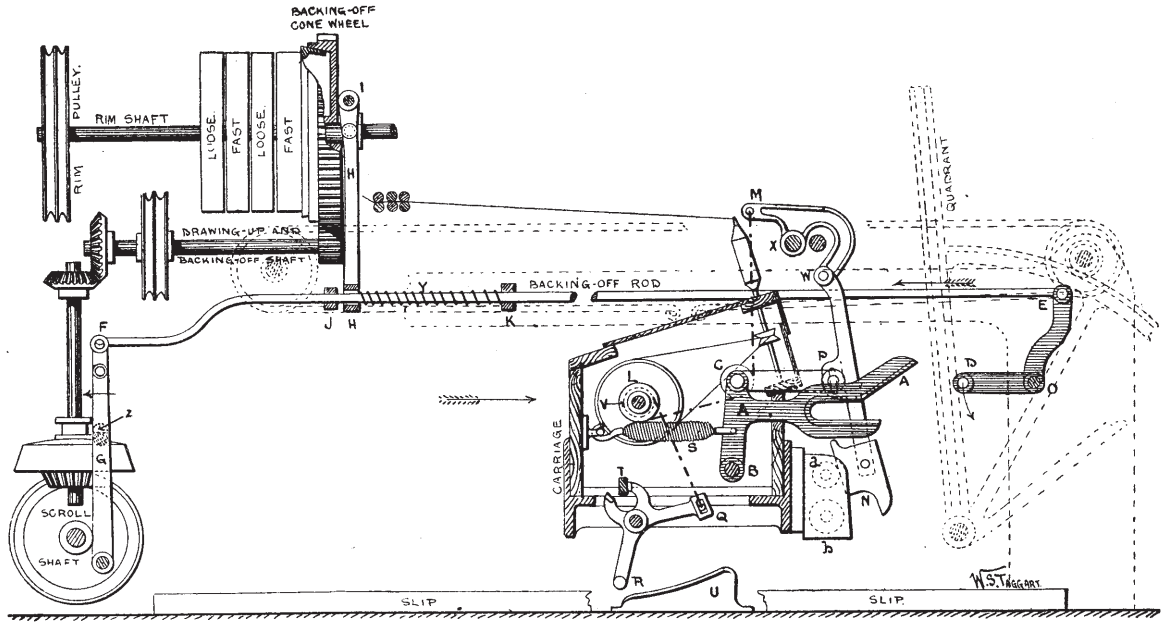


FIG. 44.

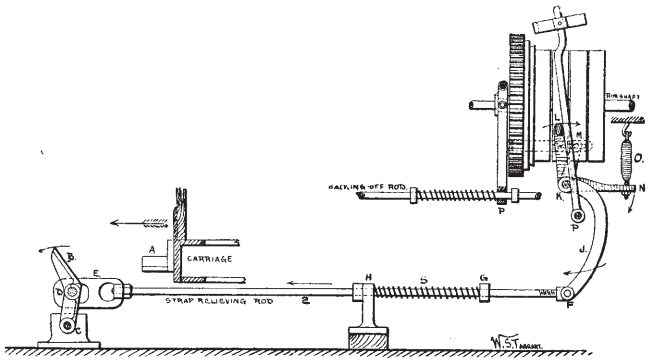


FIG. 45.

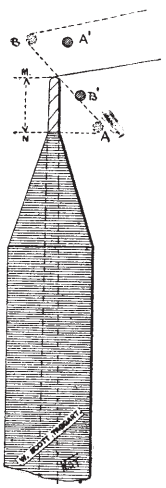


FIG. 48.

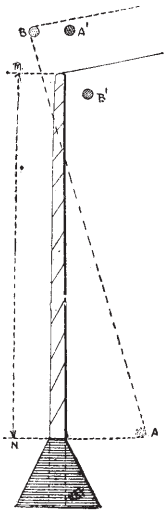


FIG. 49.

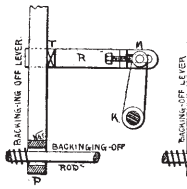


FIG. 46.

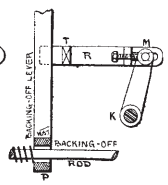


FIG. 47.

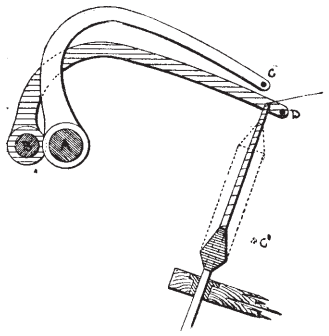


FIG. 50.

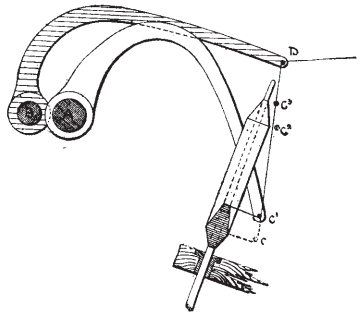


FIG. 51.

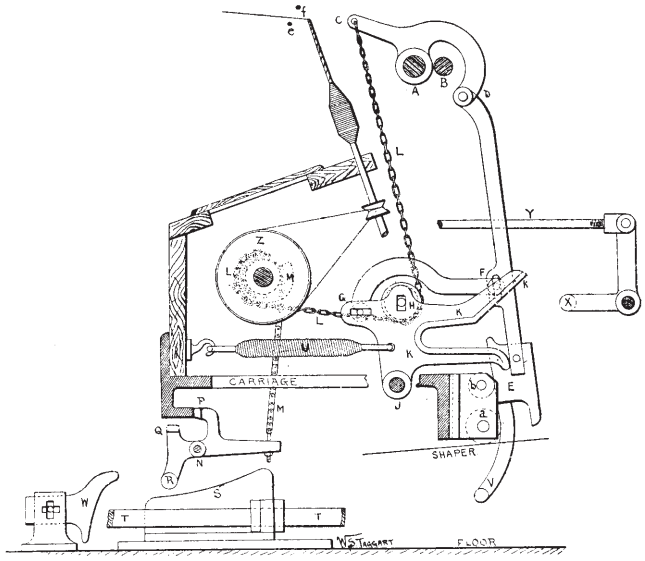


FIG. 52.

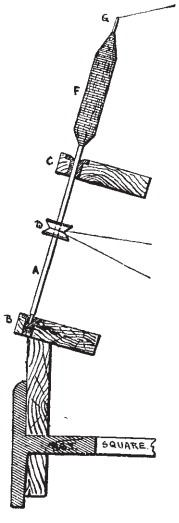


FIG. 53.

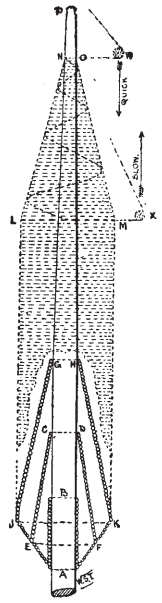


FIG. 54.

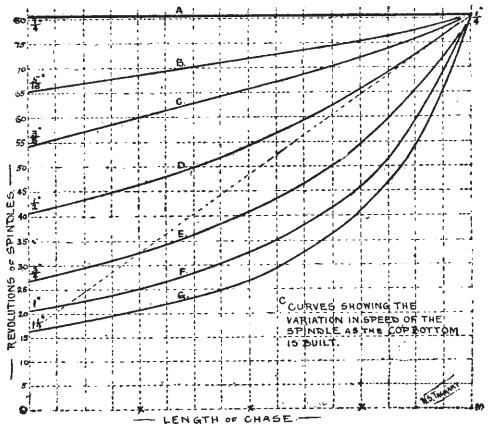


FIG. 55.

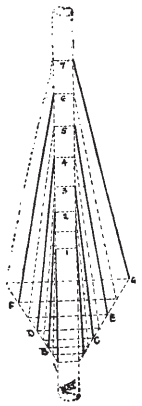


FIG. 56.

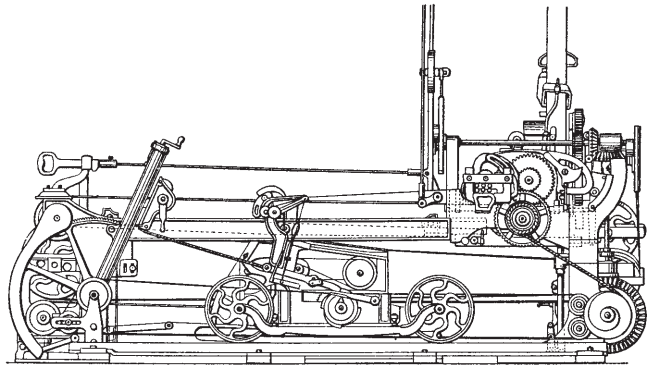


FIG. 58.

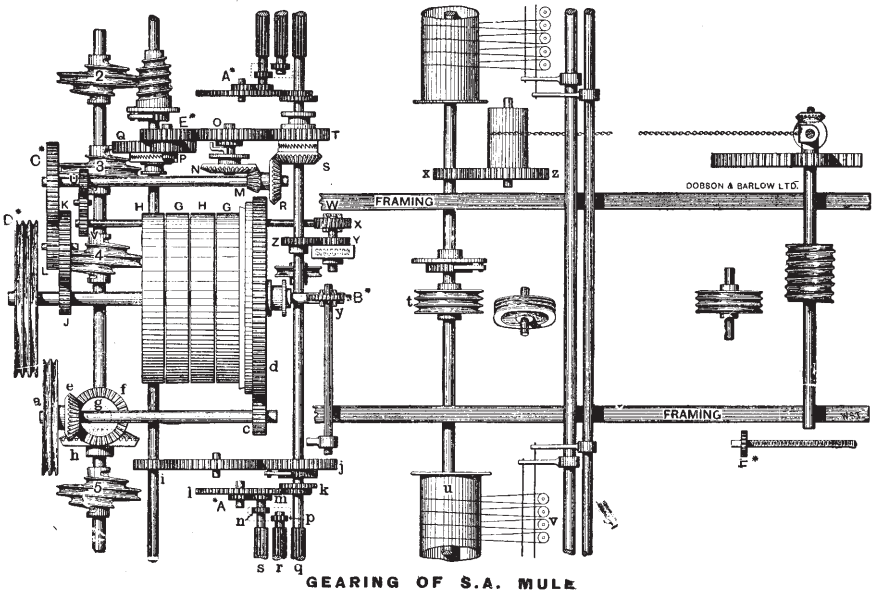


FIG. 57.

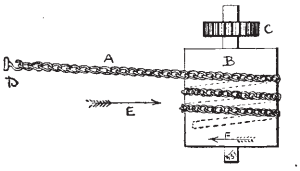


FIG. 59.

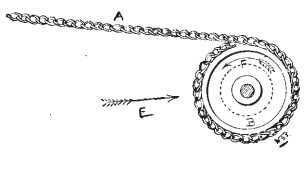
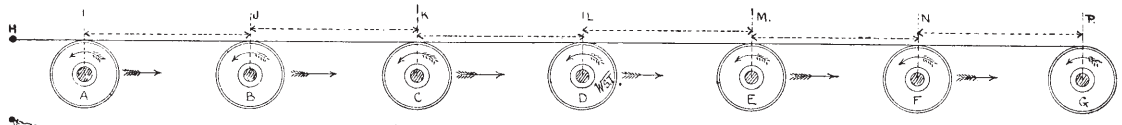


FIG. 60.

FIG. 61.



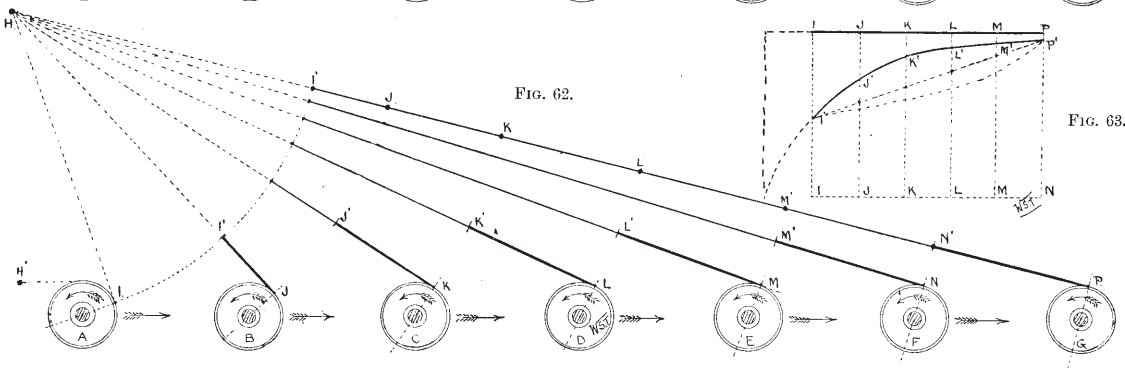


FIG. 62.

FIG. 63.

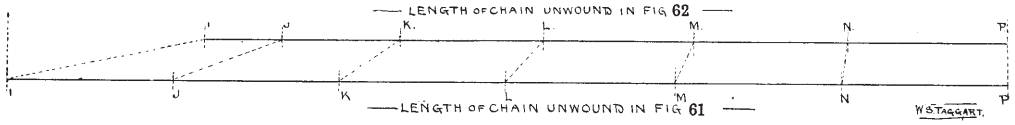
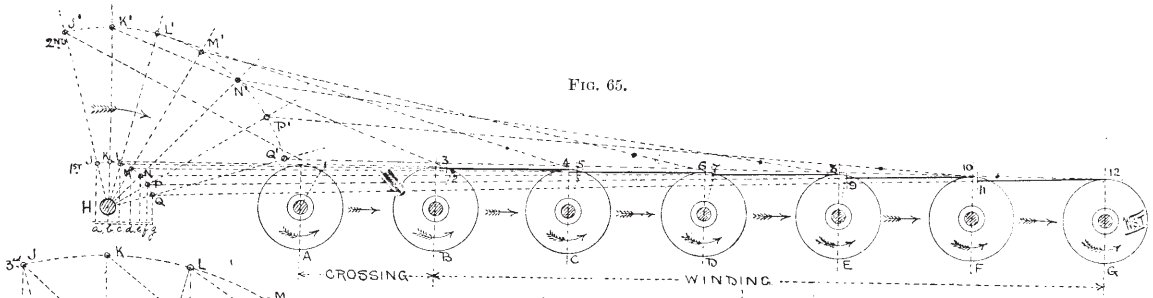


FIG. 64.

FIG. 65.



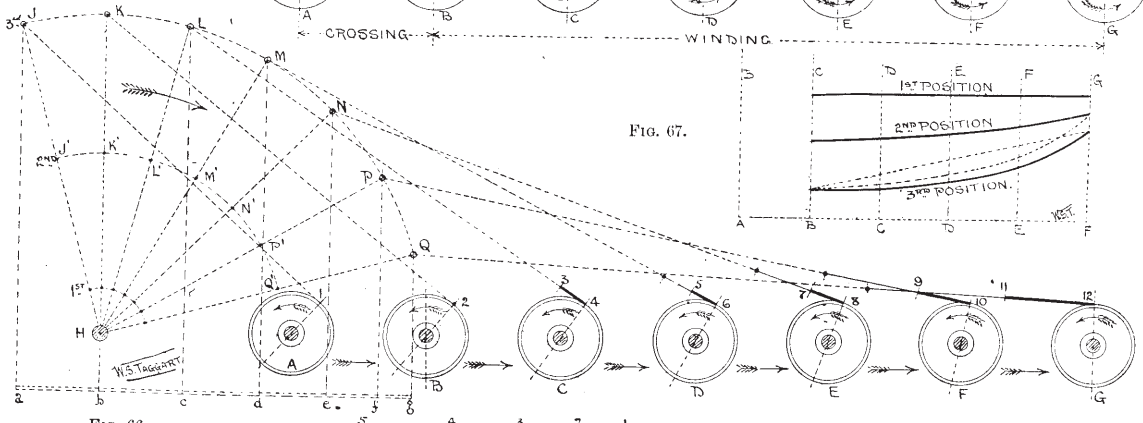
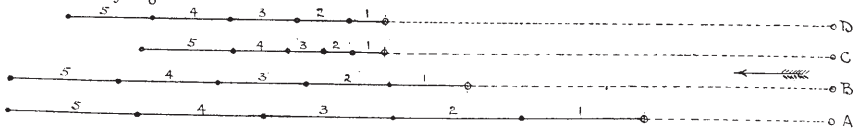


FIG. 66.

FIG. 67.

FIG. 68.



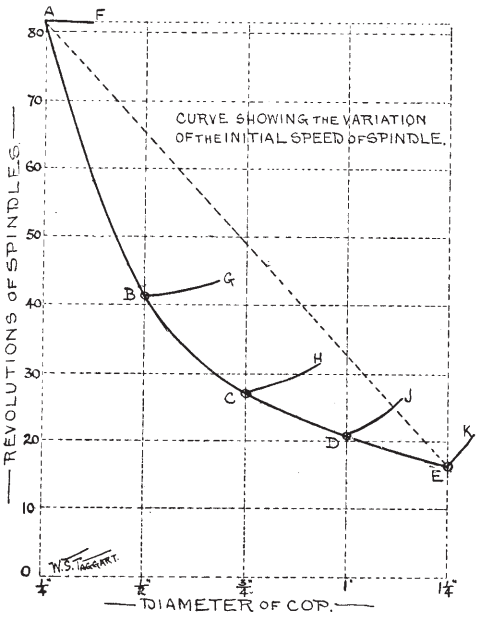


Fig. 69.

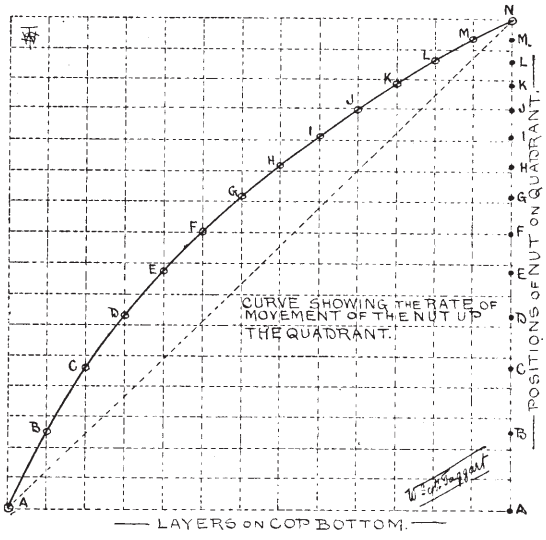


Fig. 70.

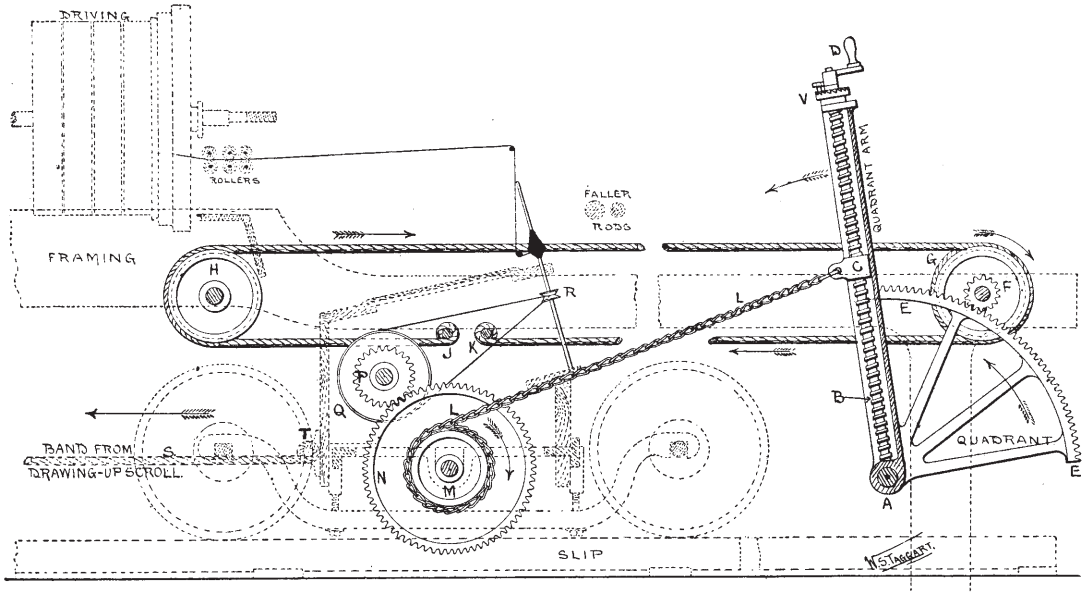


Fig. 71.

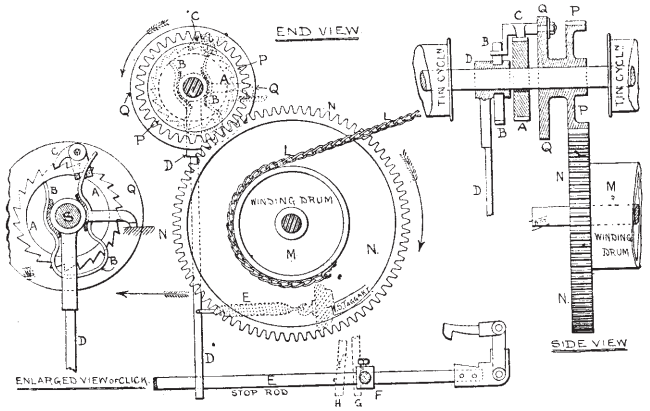


FIG. 72.

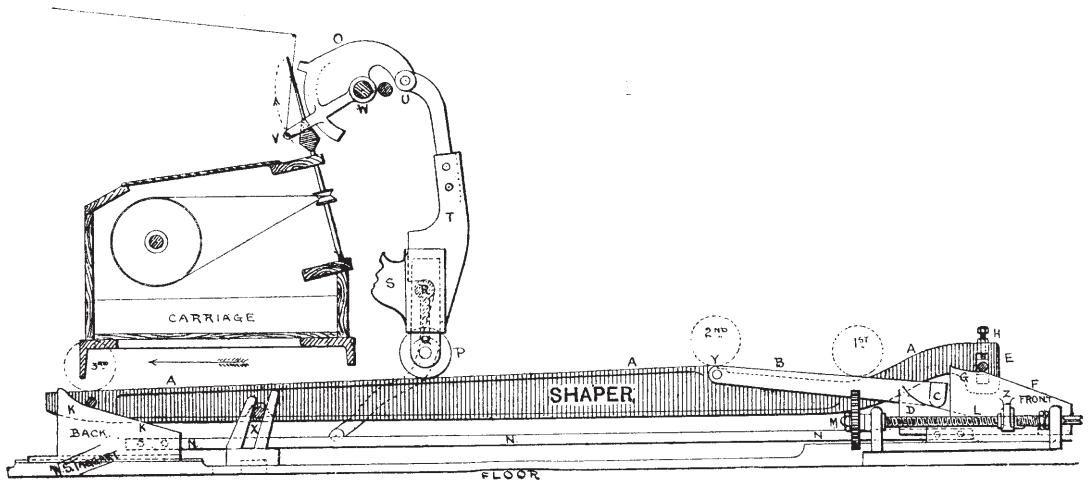


FIG. 73.

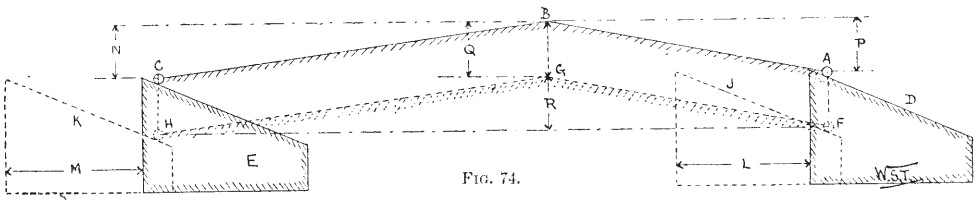


FIG. 74.

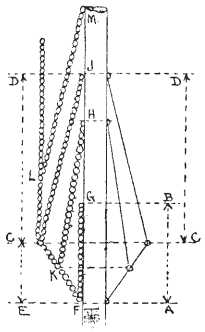


FIG. 75.

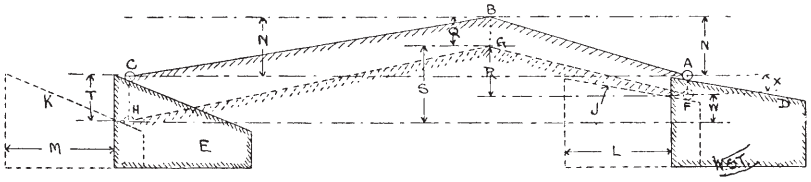


FIG. 76.

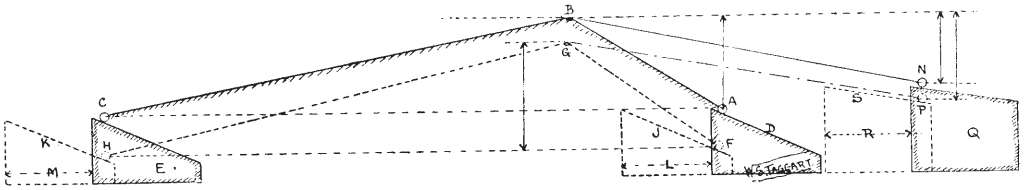


FIG. 77.

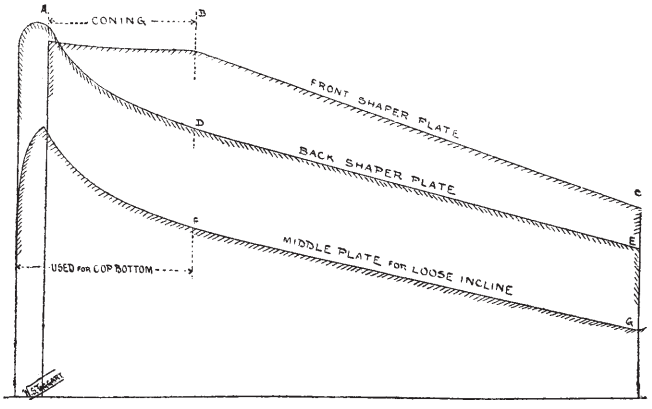


FIG. 78.

FIG. 79.

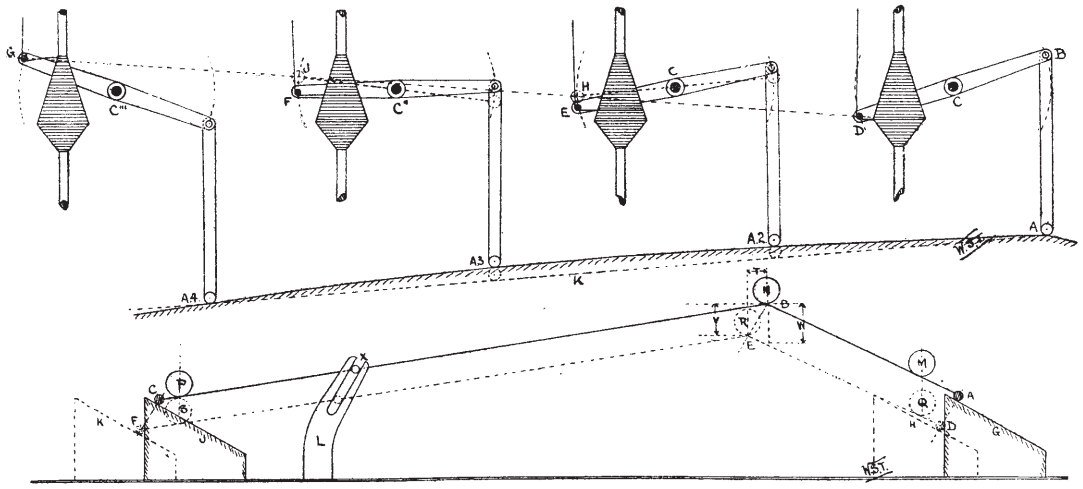


FIG. 80.

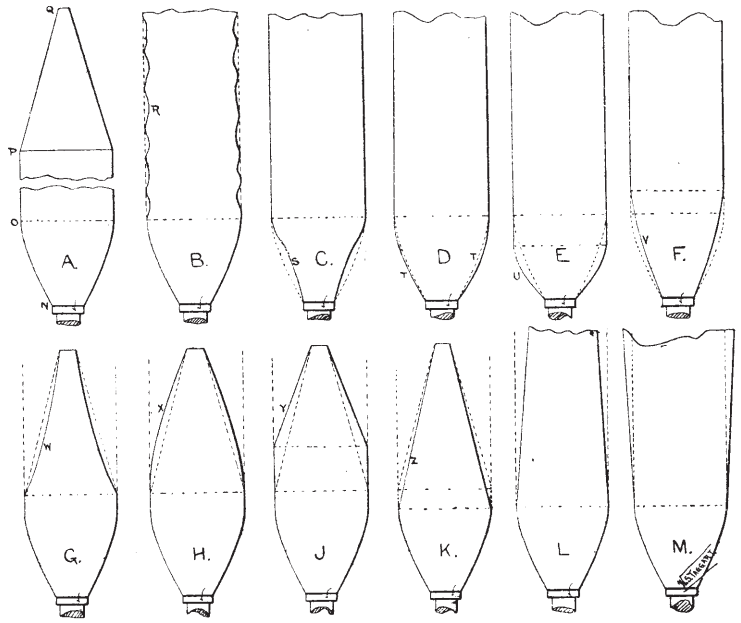


FIG. 81.

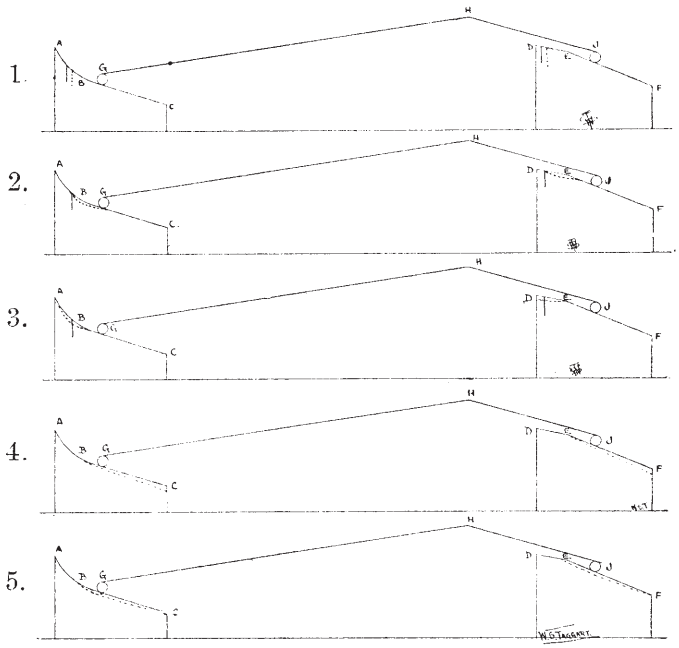


FIG. 82.

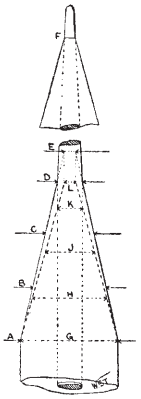


FIG. 86.

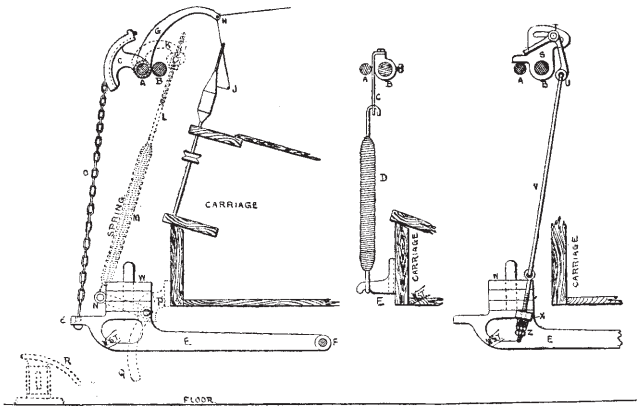


FIG. 83.

FIG. 84.

FIG. 85.

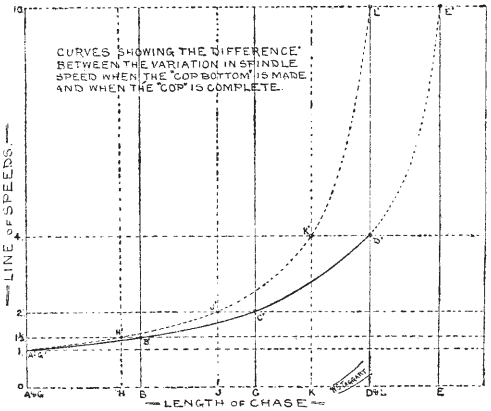


FIG. 87.

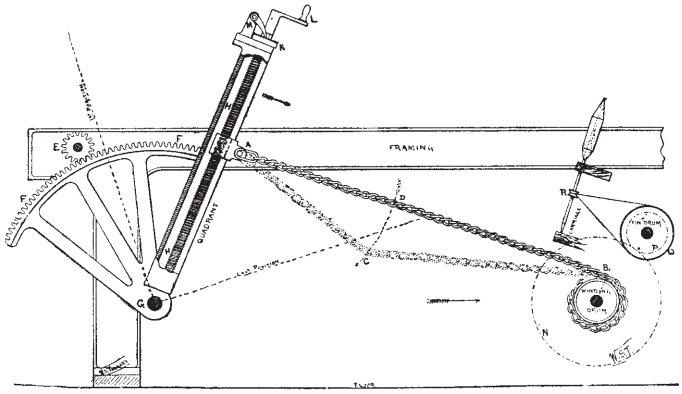


FIG. 88.

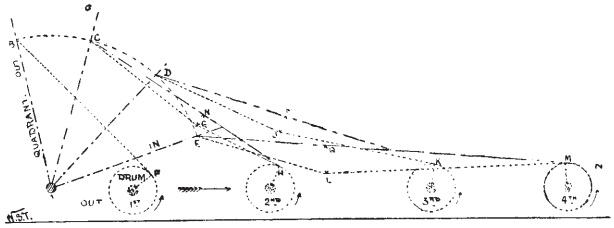


FIG. 89.

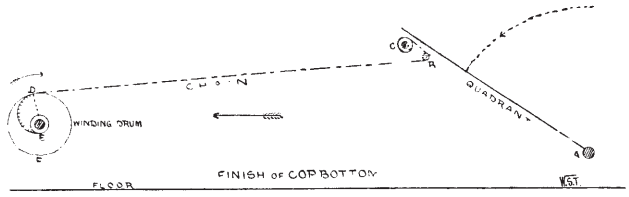


FIG. 90.

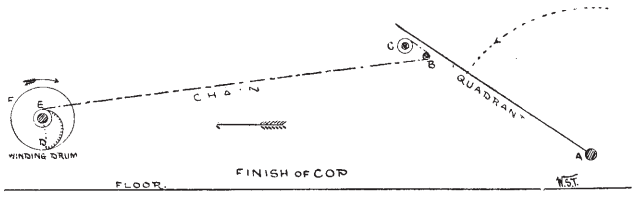


FIG. 91

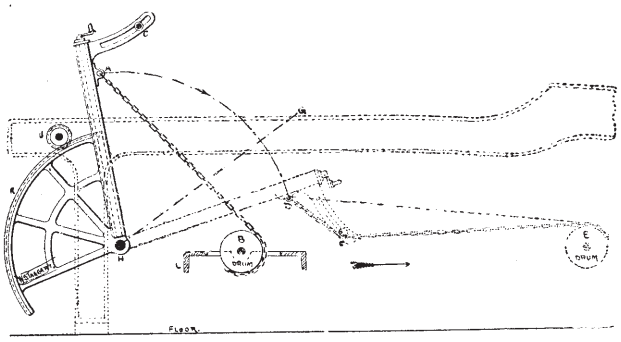


FIG. 92.

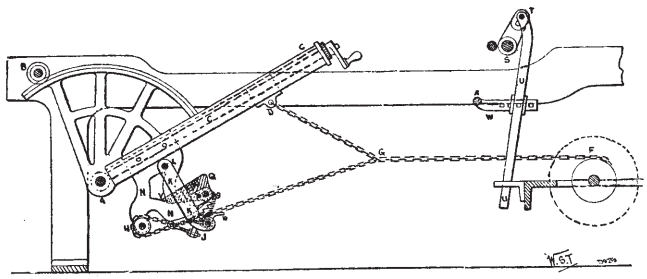


FIG. 93.

FIG. 94.

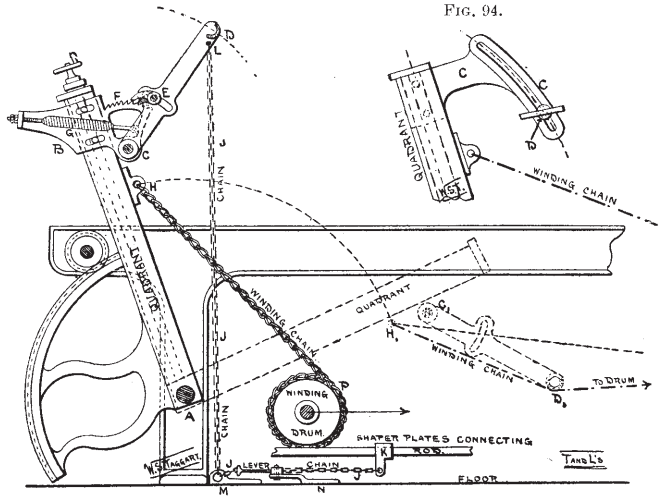


FIG. 95.

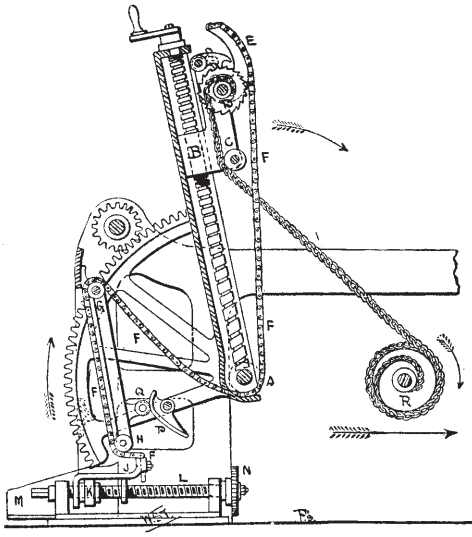


FIG. 96.

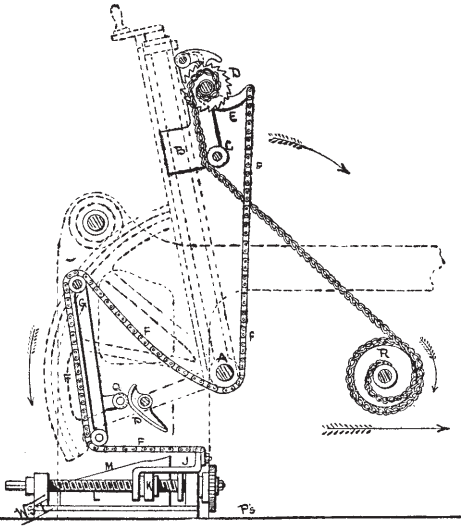


FIG. 97.

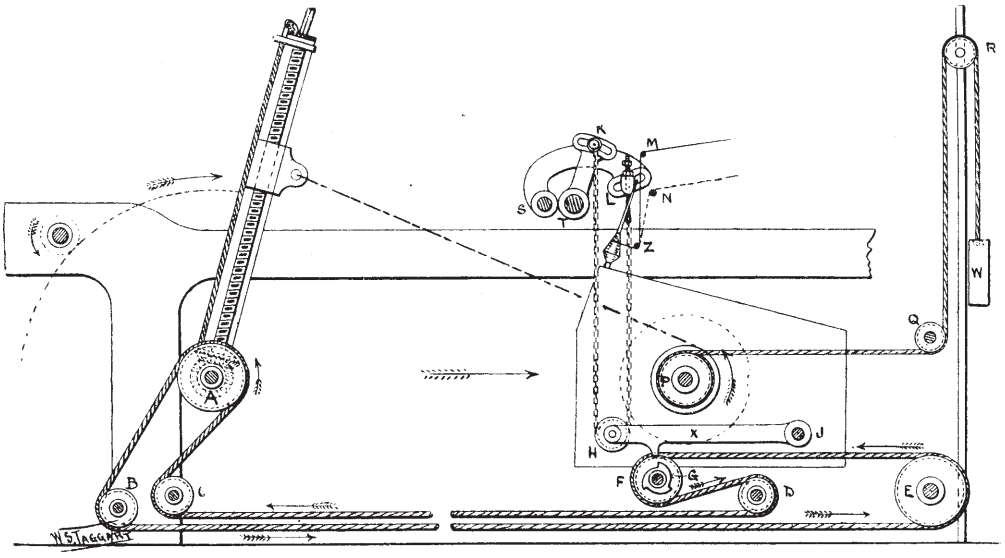


FIG. 98.

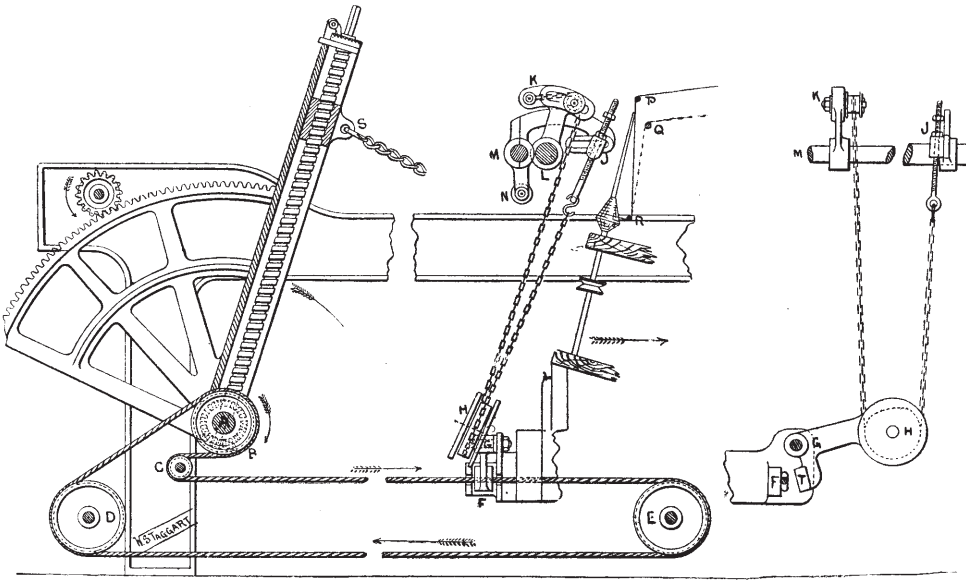


FIG. 99.

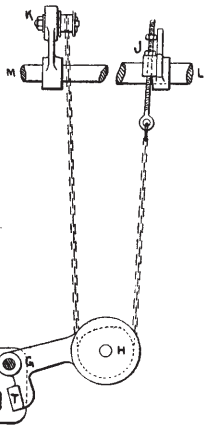


FIG. 100.

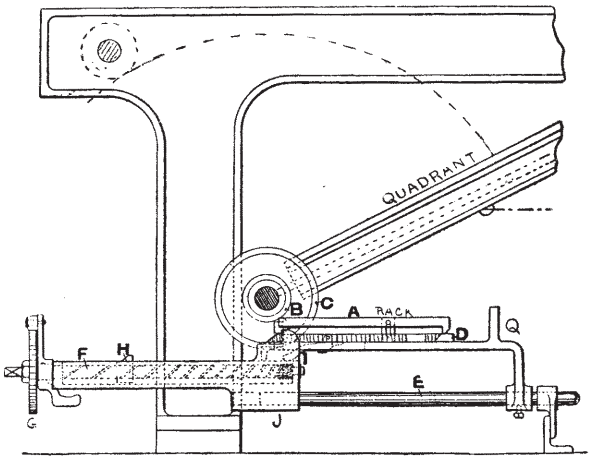


FIG. 101.

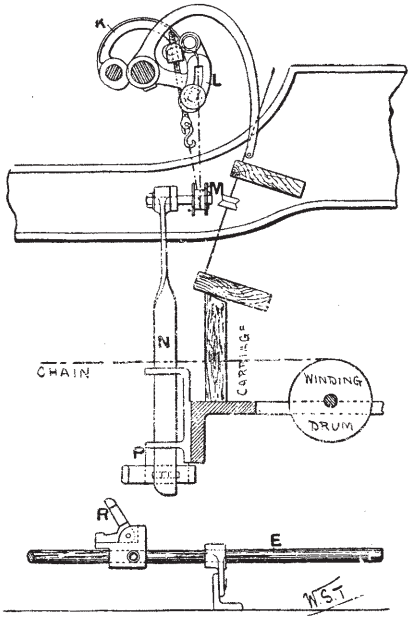


FIG. 102.

FIG. 105.

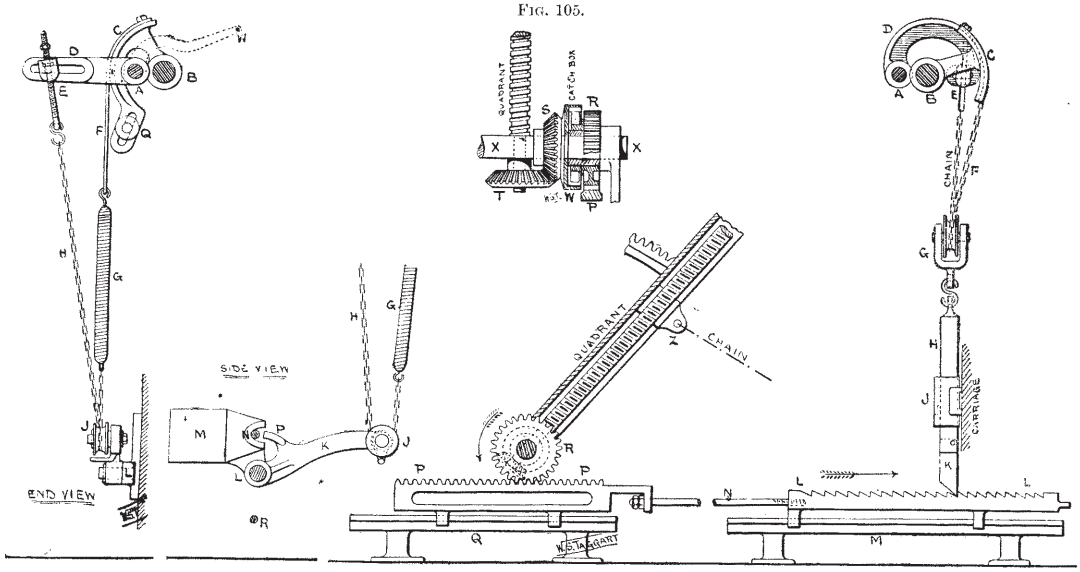


FIG. 103.

FIG. 104.

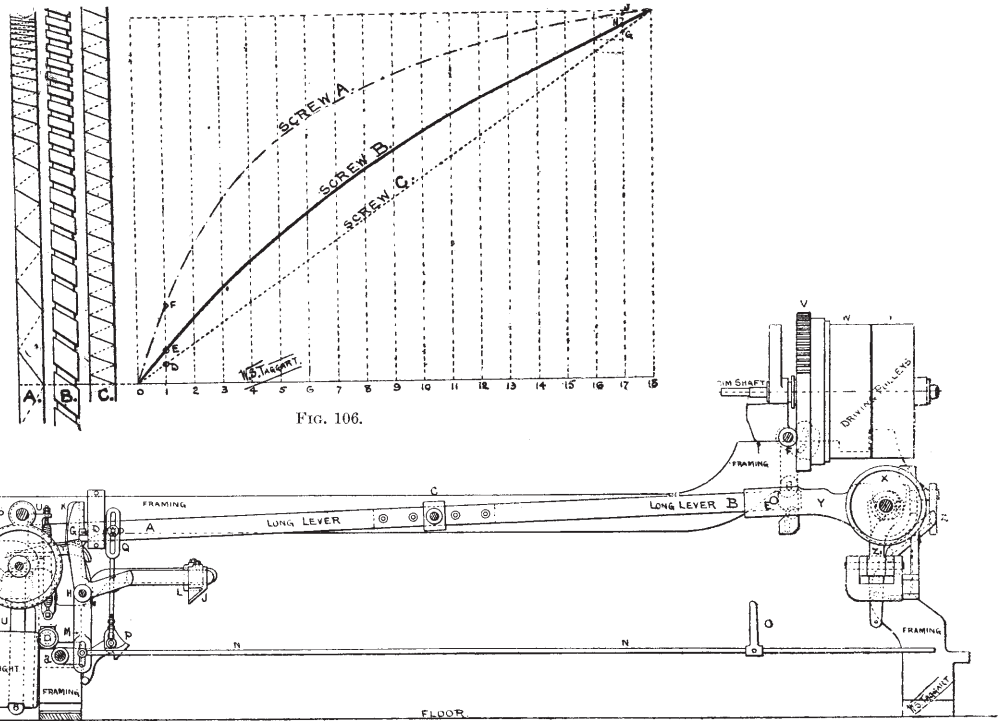


FIG. 106.

FIG. 107.

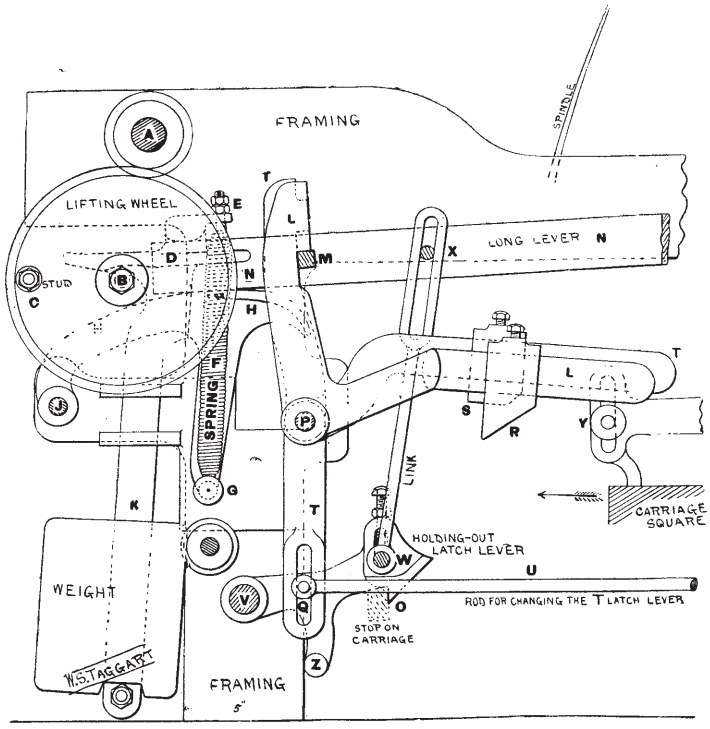


FIG. 108

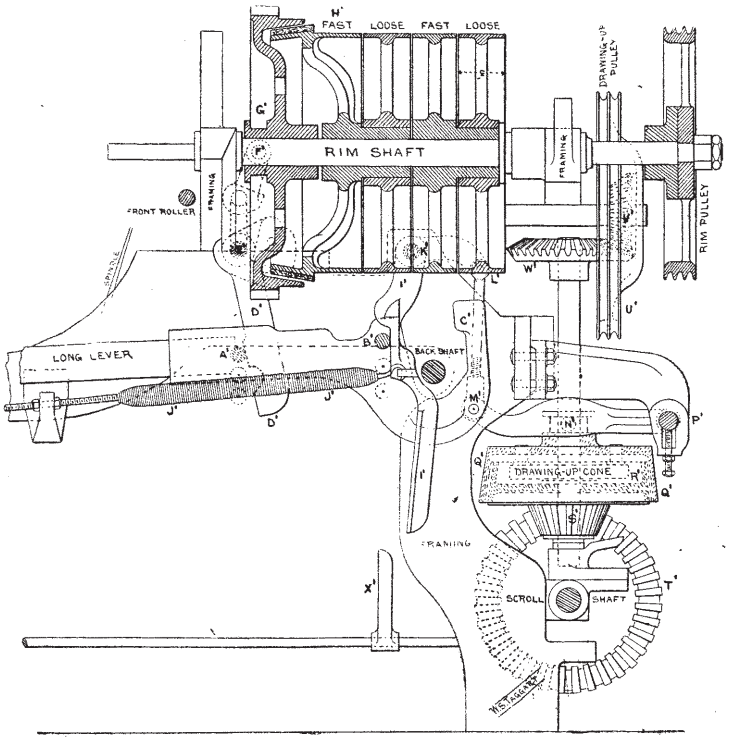


FIG. 109.

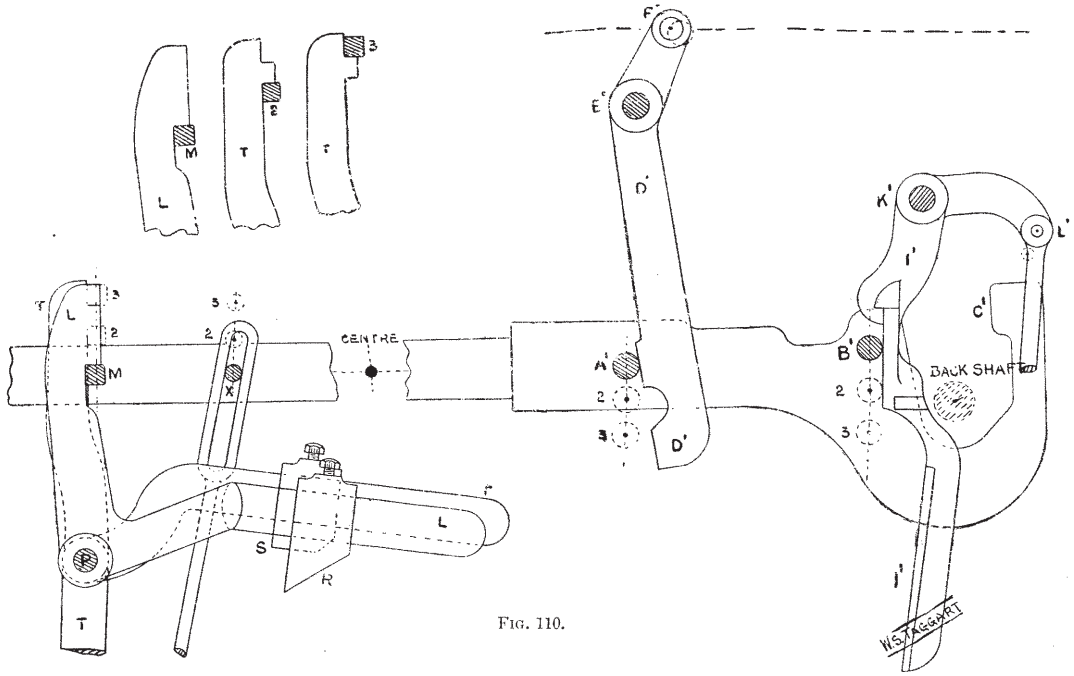


FIG. 110.

FIG. 112.

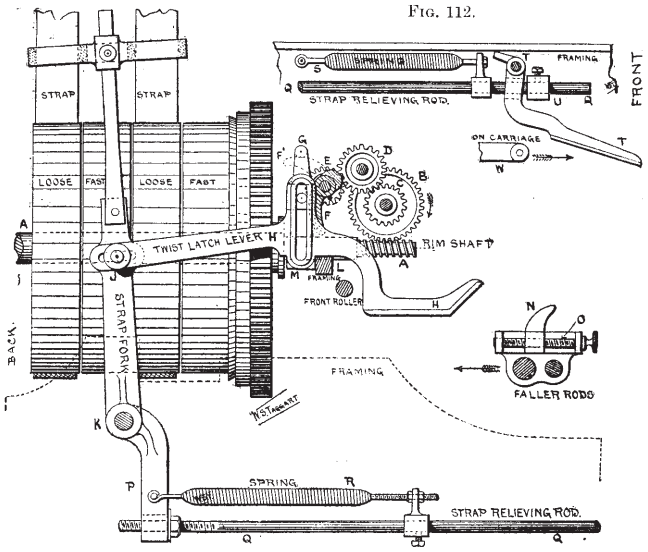


FIG. 111.

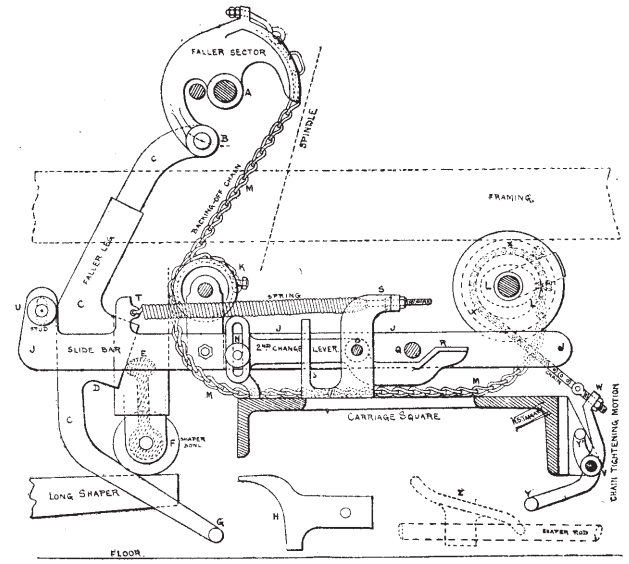


FIG. 113.

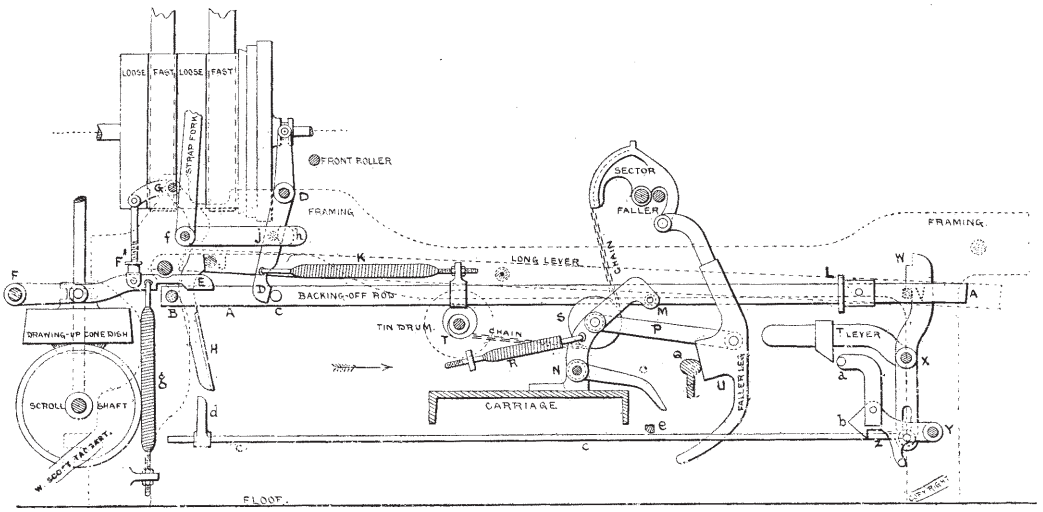


FIG. 114.

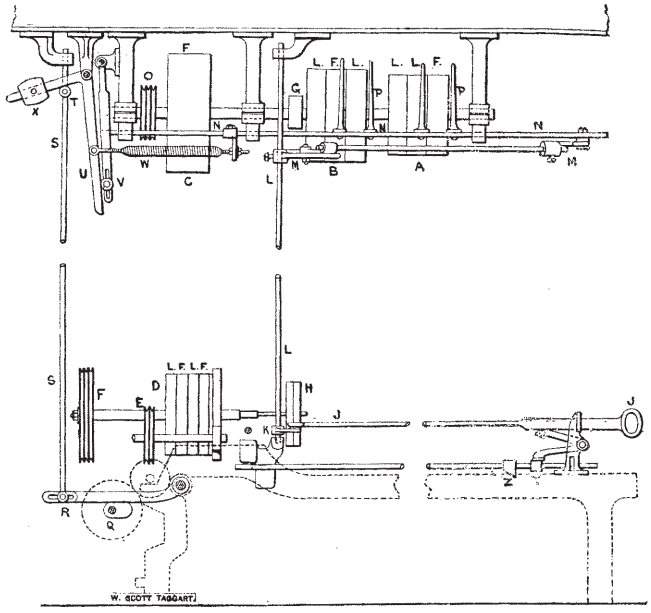


FIG. 115.

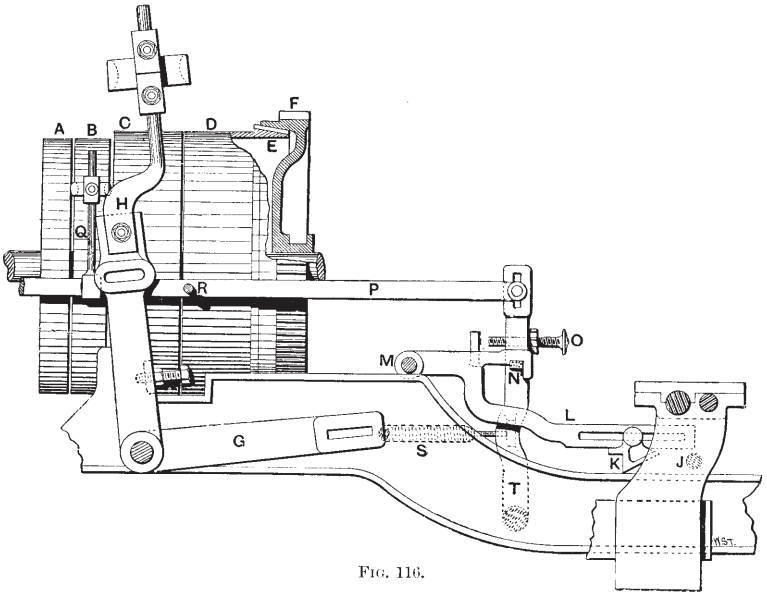
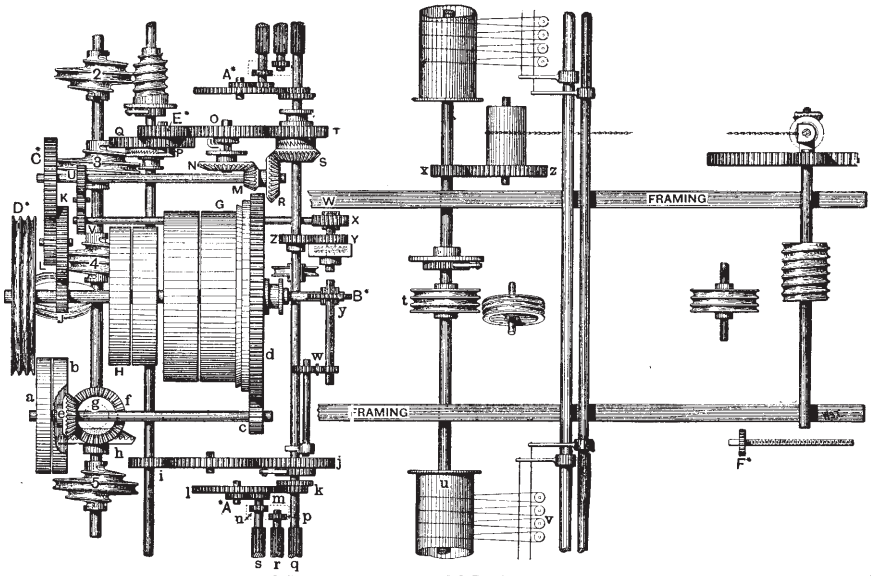


FIG. 116.



GEARING OF S.A. MULE FOR FINE NUMBERS

FIG. 117.

FIG. 119.

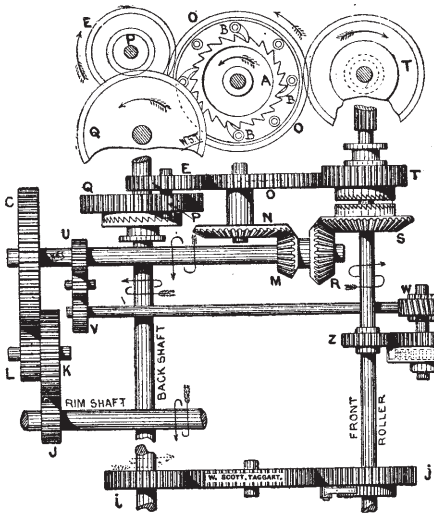


FIG. 118.

FIG. 120.

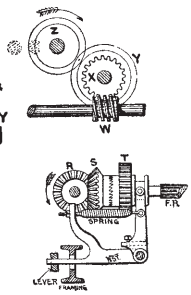


FIG. 121.

FIG. 122.

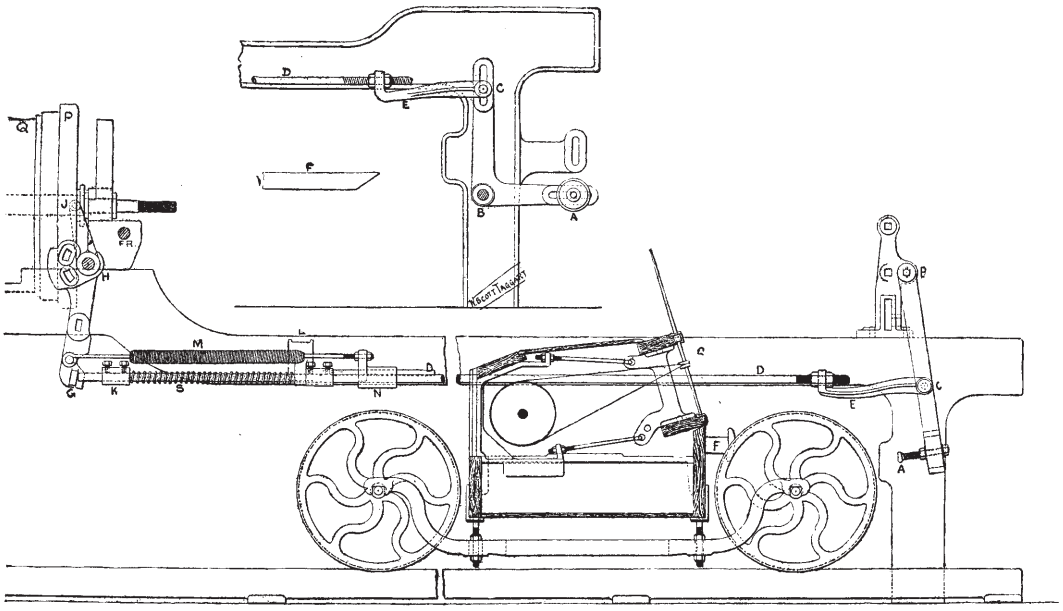


FIG. 123.

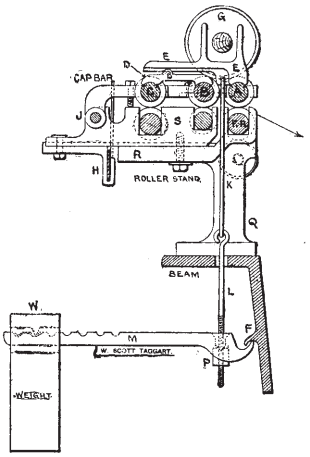


FIG. 124.

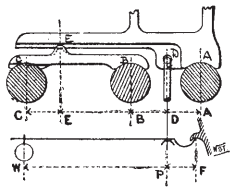


FIG. 125.

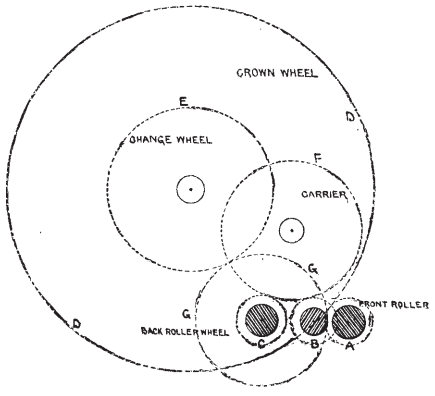


FIG. 126.

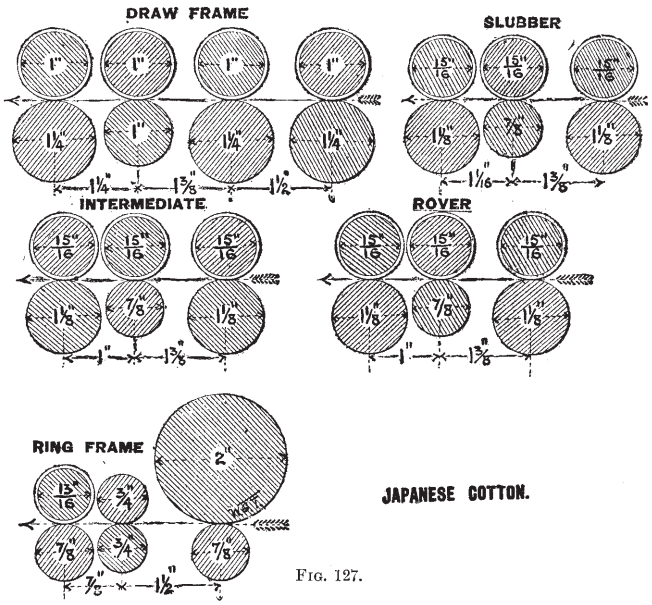


FIG. 127.

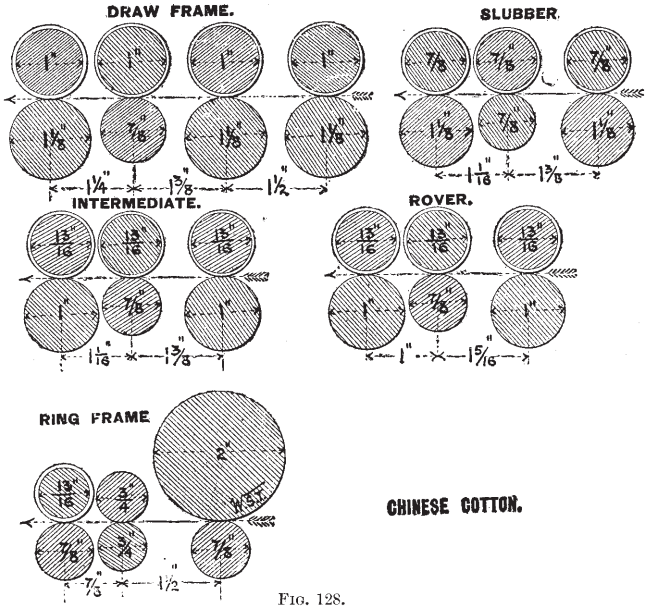


FIG. 128.

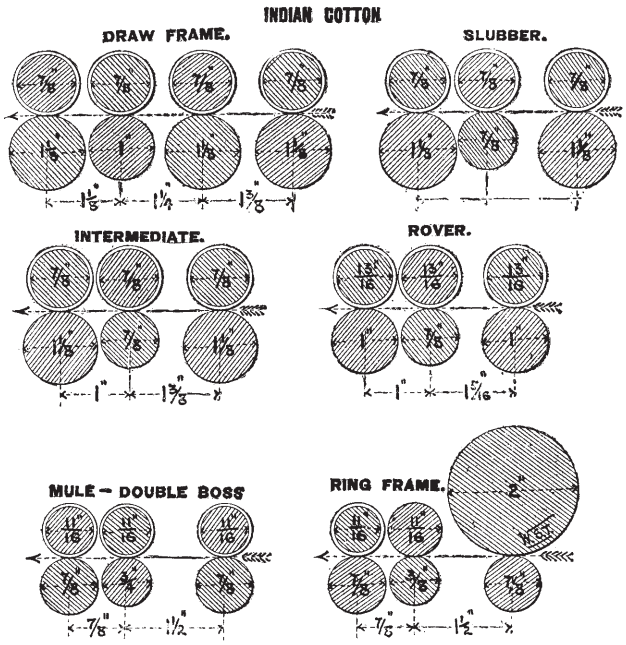


FIG. 129.

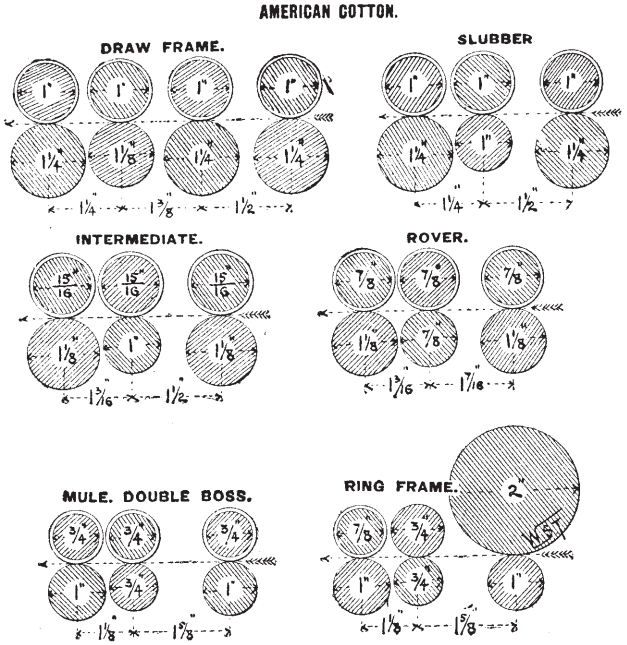


FIG. 130.

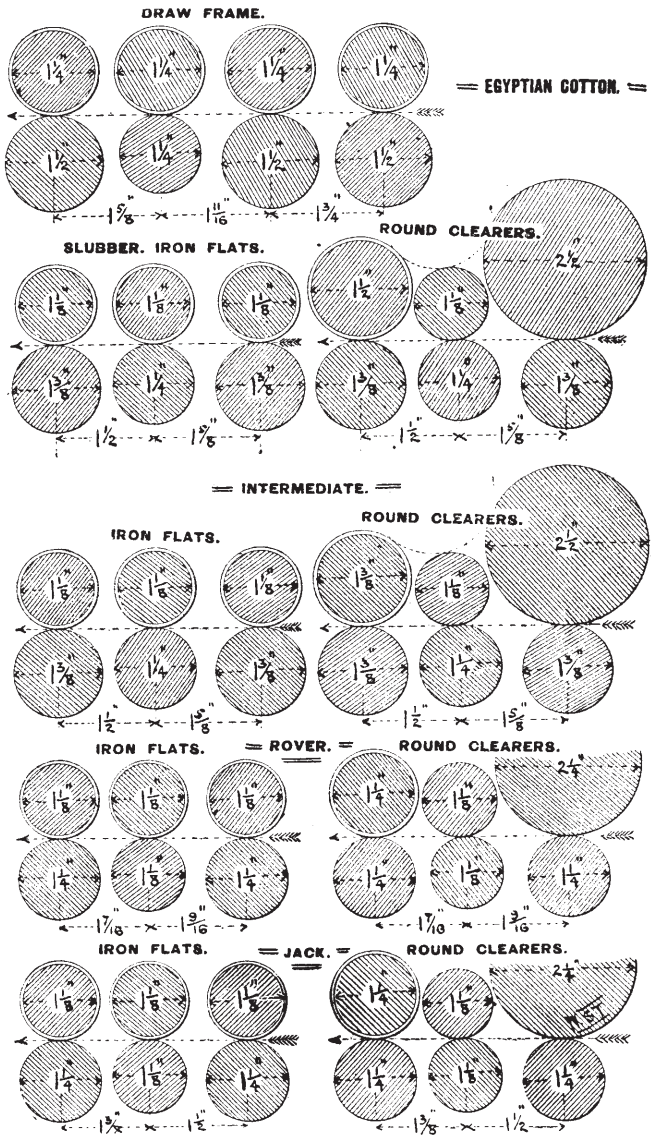


FIG. 131.

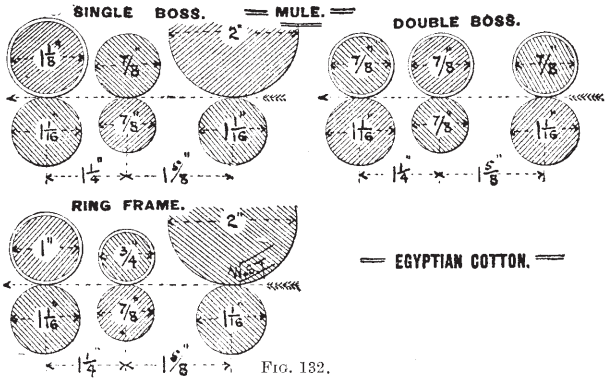


FIG. 132.

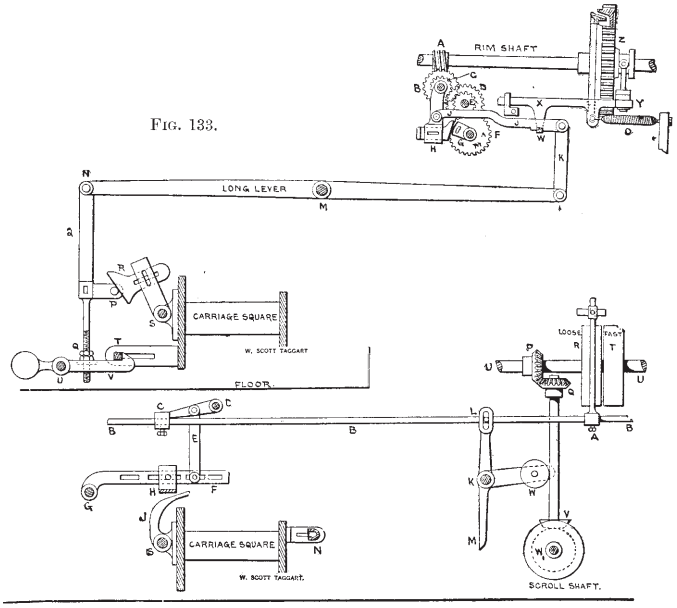


FIG. 133.

FIG. 134.

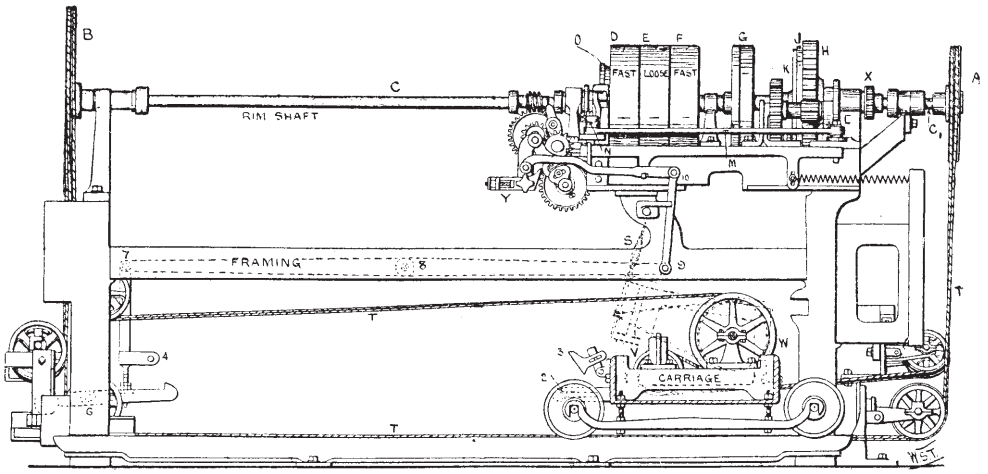


FIG. 135.

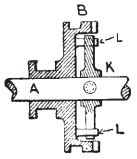


FIG. 136.

FIG. 137.

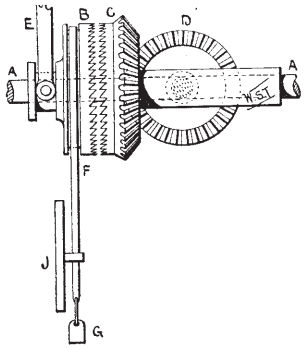
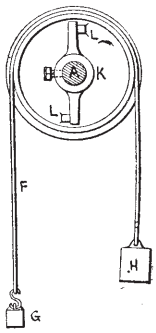


FIG. 138.



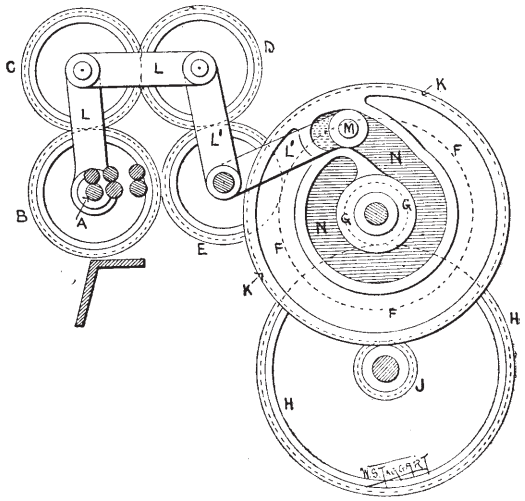


FIG. 139.

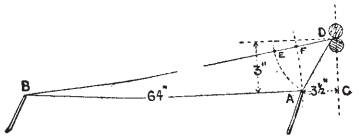


FIG. 140.

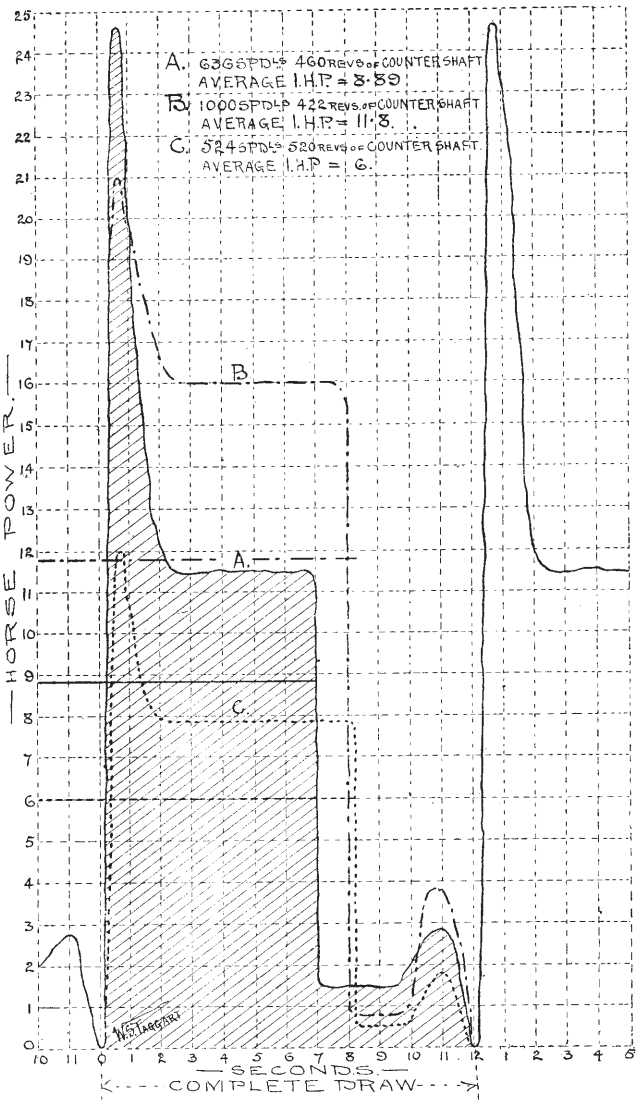


FIG. 141.

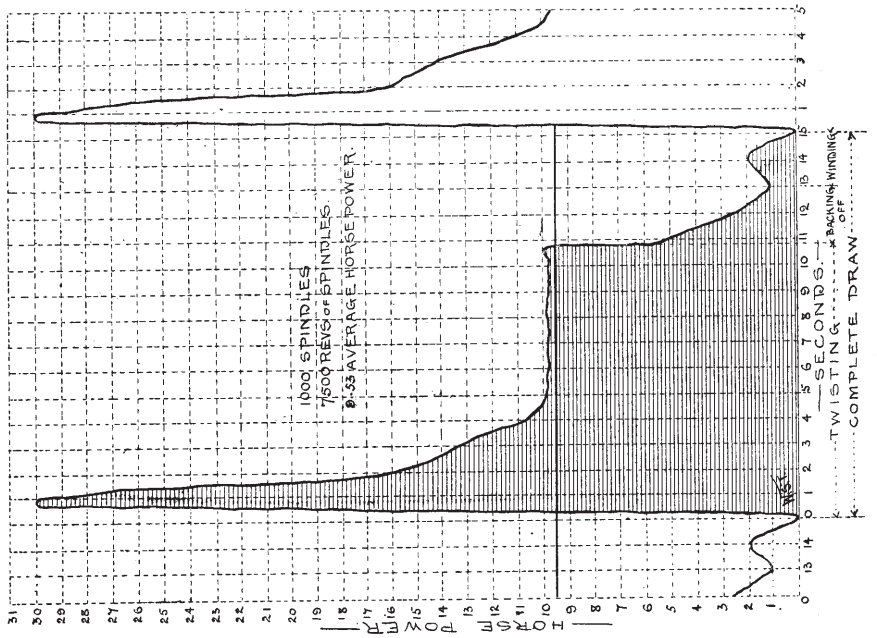


FIG. 143.

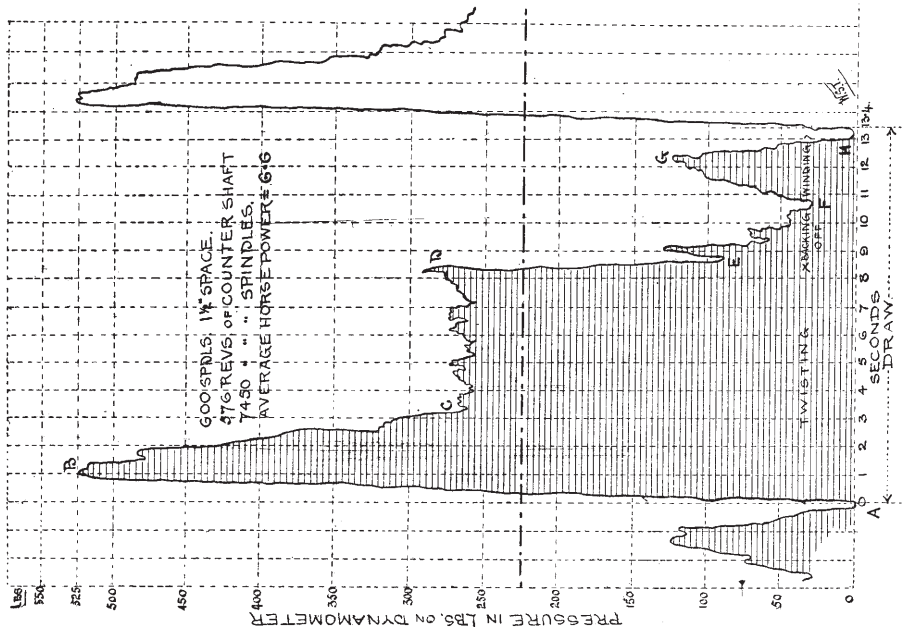


FIG. 142.

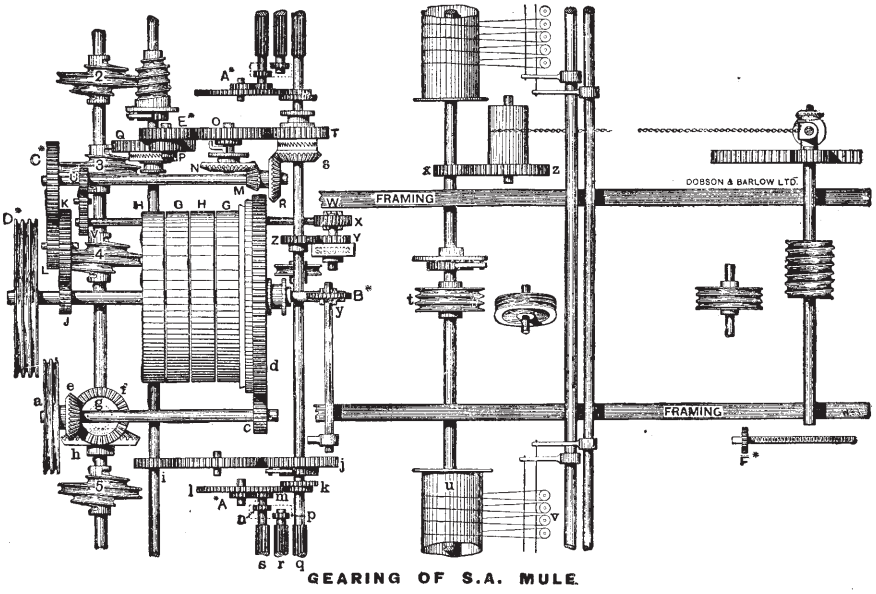


FIG. 144.

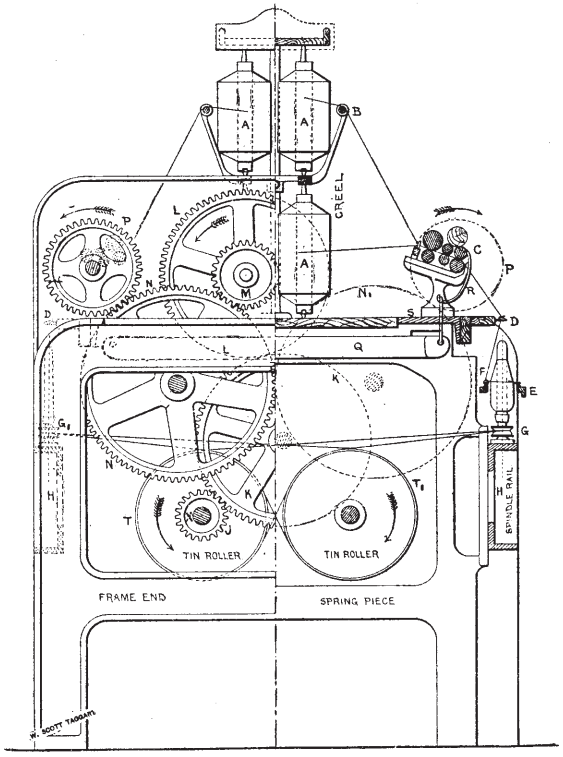
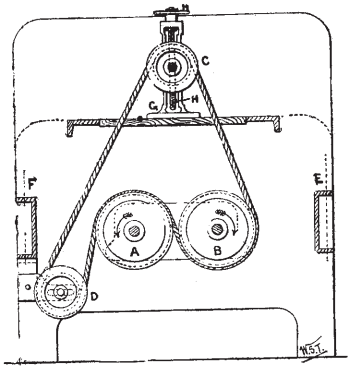


FIG. 145.

FIG. 146.



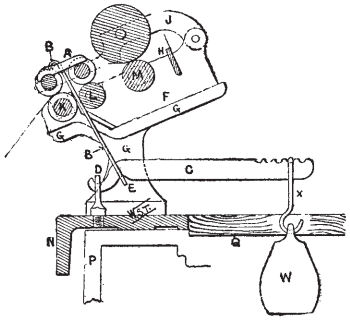
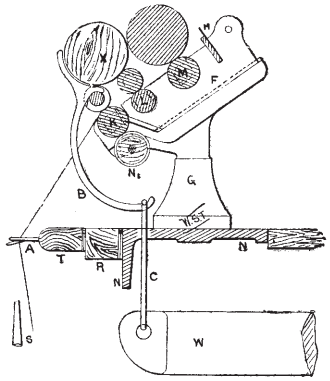


FIG. 147.

FIG. 148.



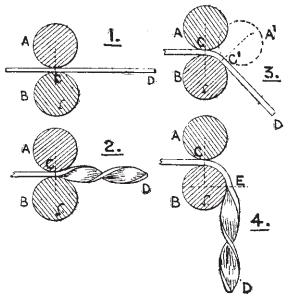


FIG. 149.

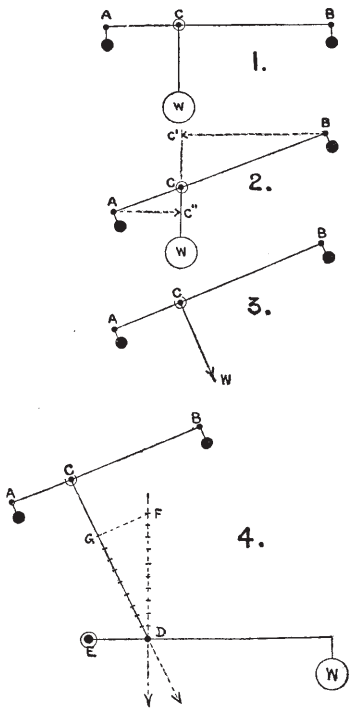


FIG. 150.

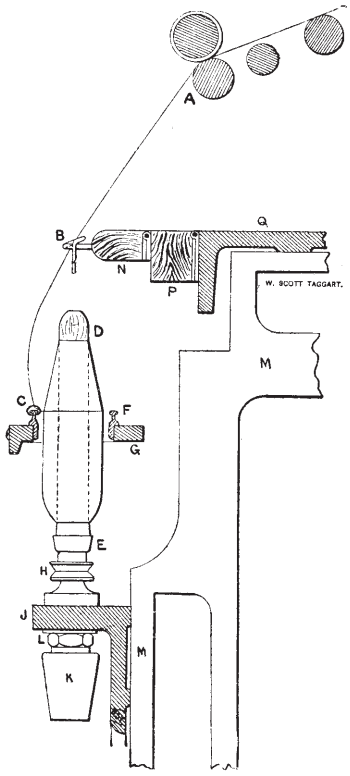


FIG. 151.

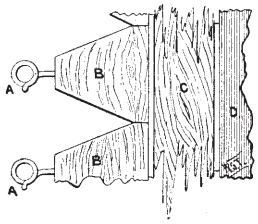


FIG. 152.

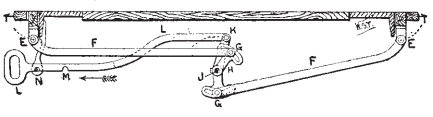


FIG. 153.

FIG. 154.

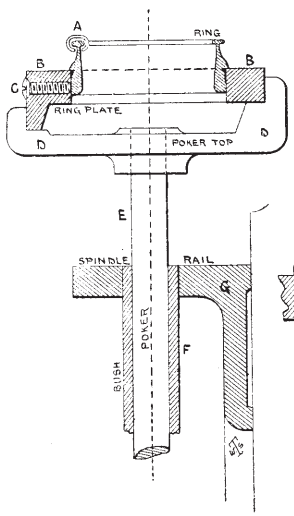
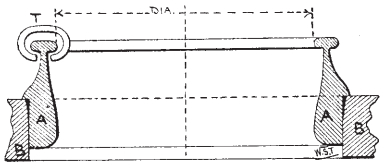


FIG. 155.



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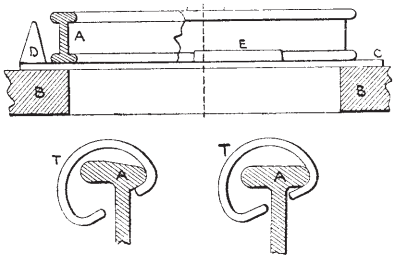


FIG. 157.

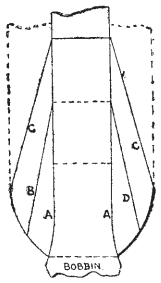
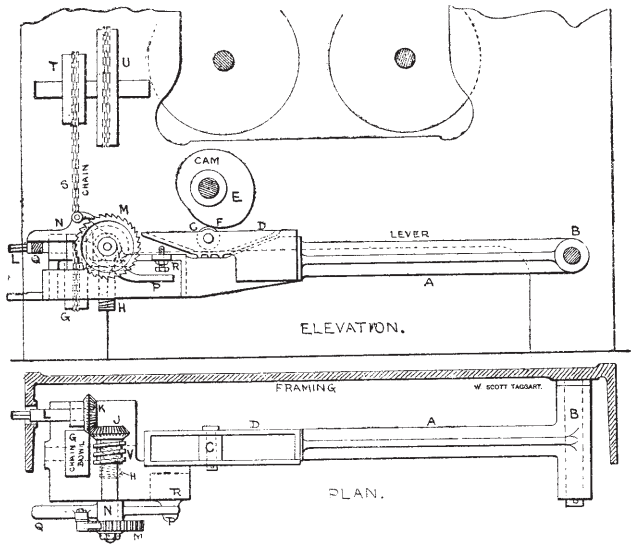


FIG. 159.



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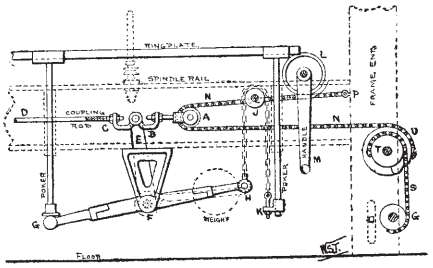


FIG. 160.

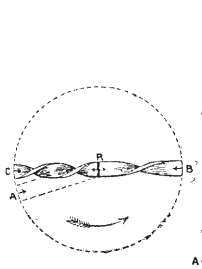


FIG. 161.

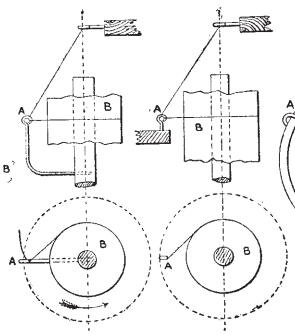
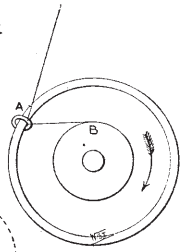


FIG. 162.

FIG. 163.



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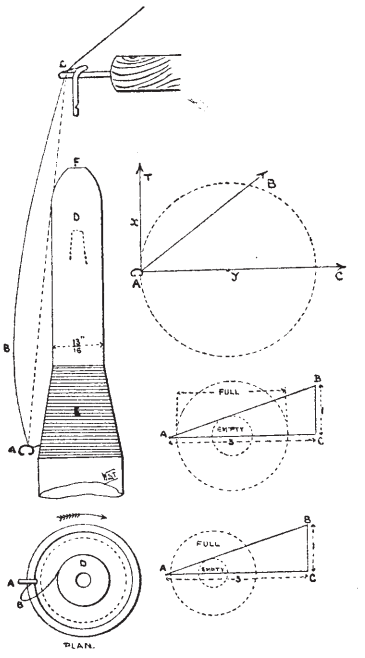


FIG. 165.

FIG. 166.

FIG. 167.

FIG. 168.

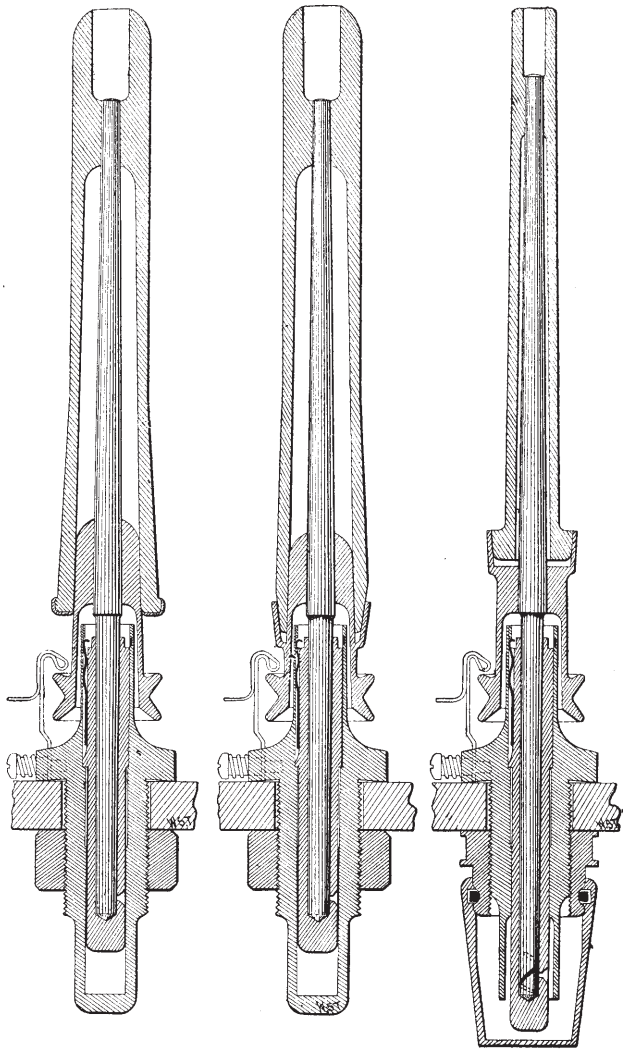


FIG. 169

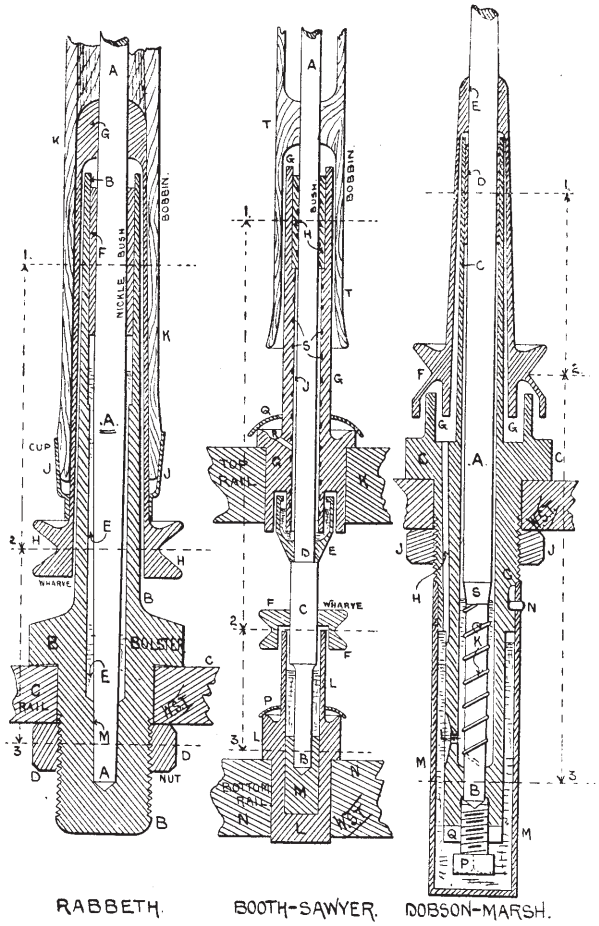


FIG. 170. FIG. 171. FIG. 172.

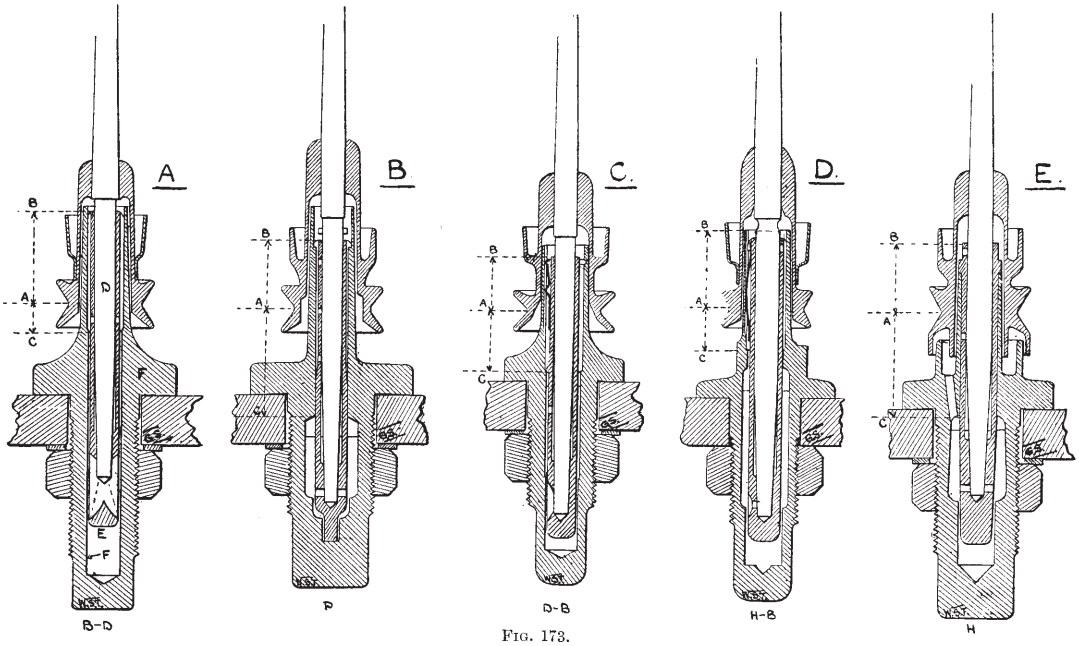


FIG. 173.

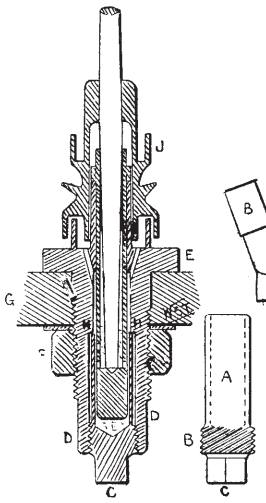


FIG. 174.

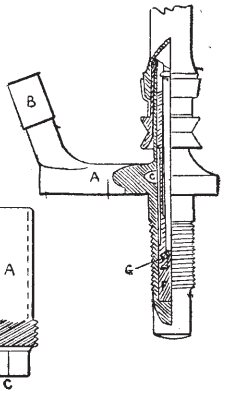


FIG. 175.

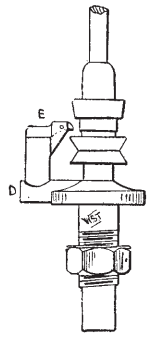


FIG. 176.

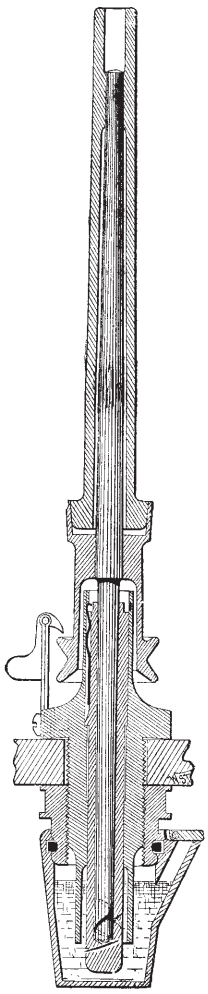


FIG. 178.

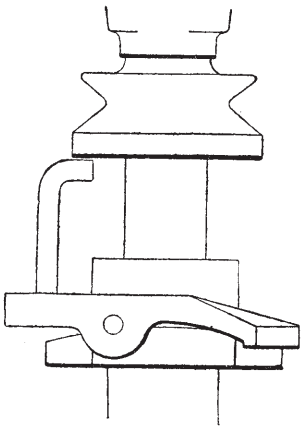
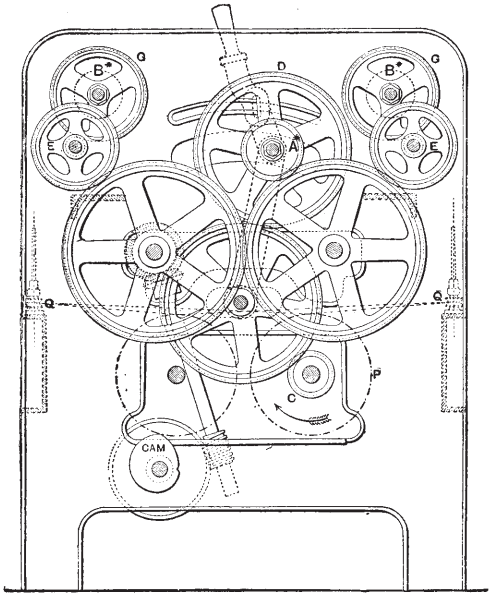


FIG. 177.



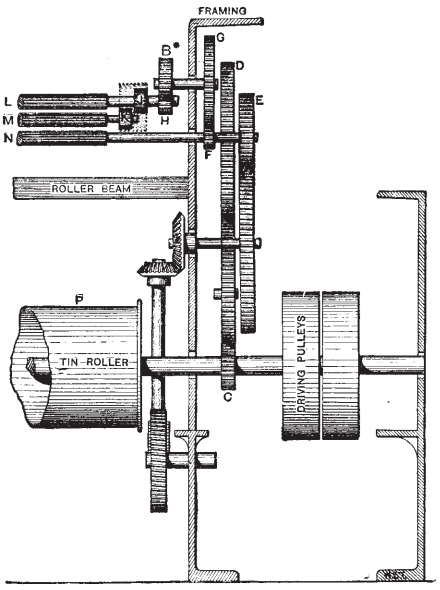


FIG. 179.

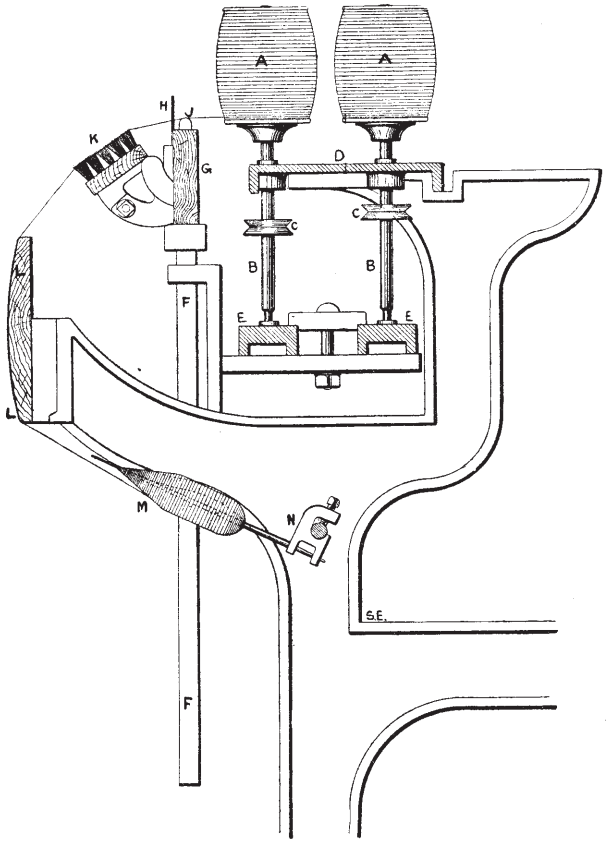


FIG. 180.

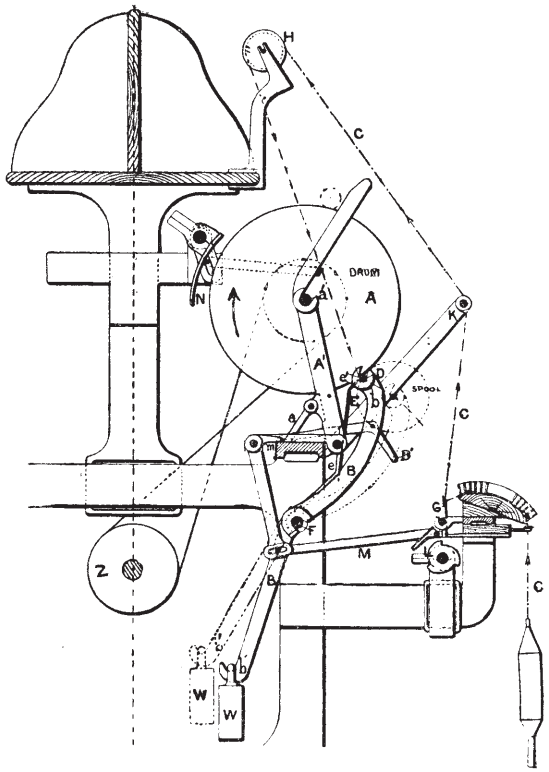


FIG. 182.

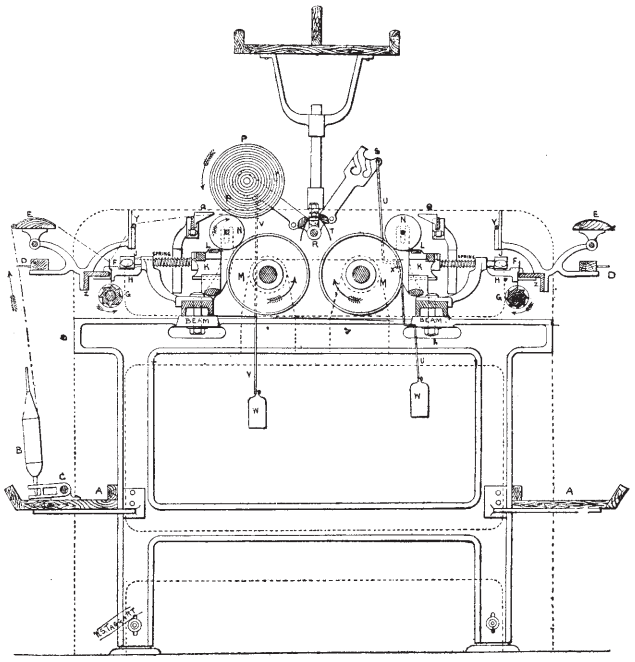


FIG. 181.

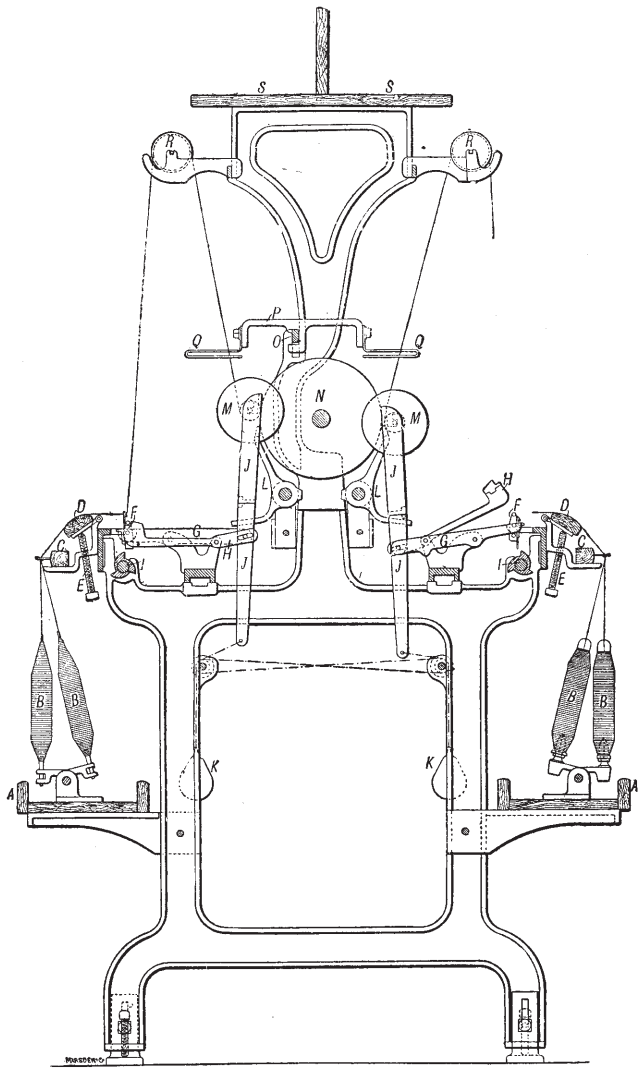


FIG. 183.

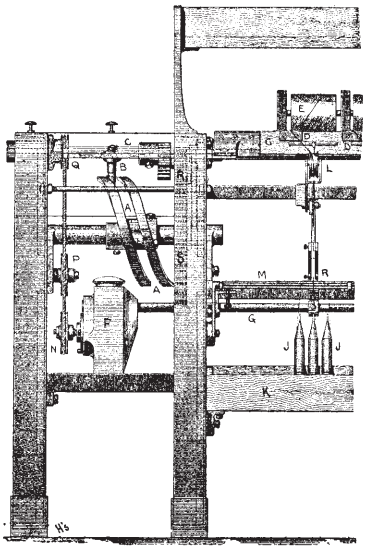


FIG. 185.

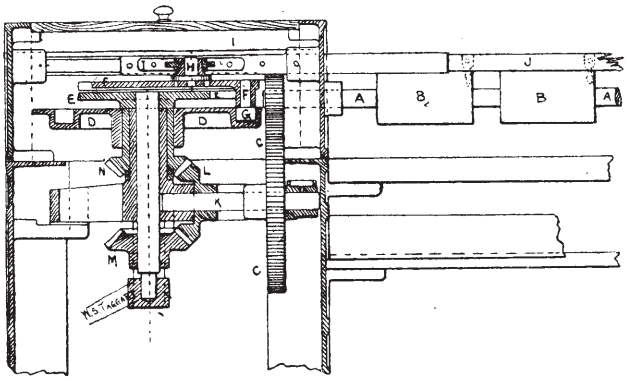


FIG. 184.

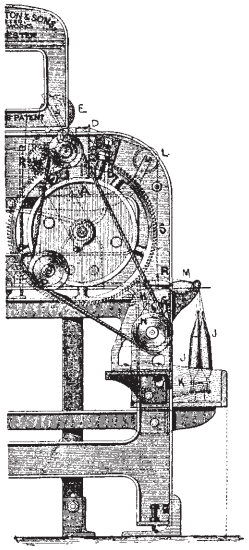


FIG. 186.

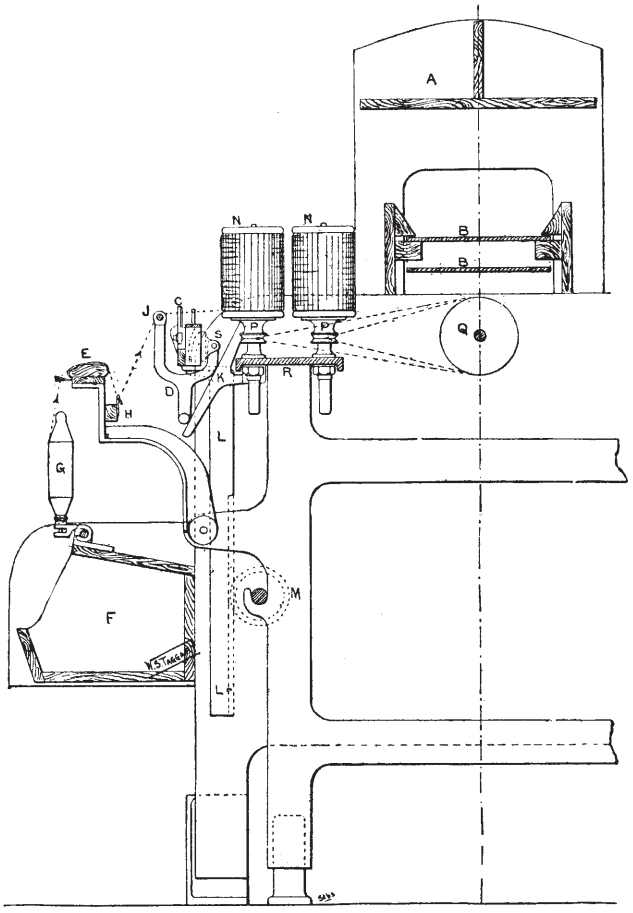


FIG. 187.

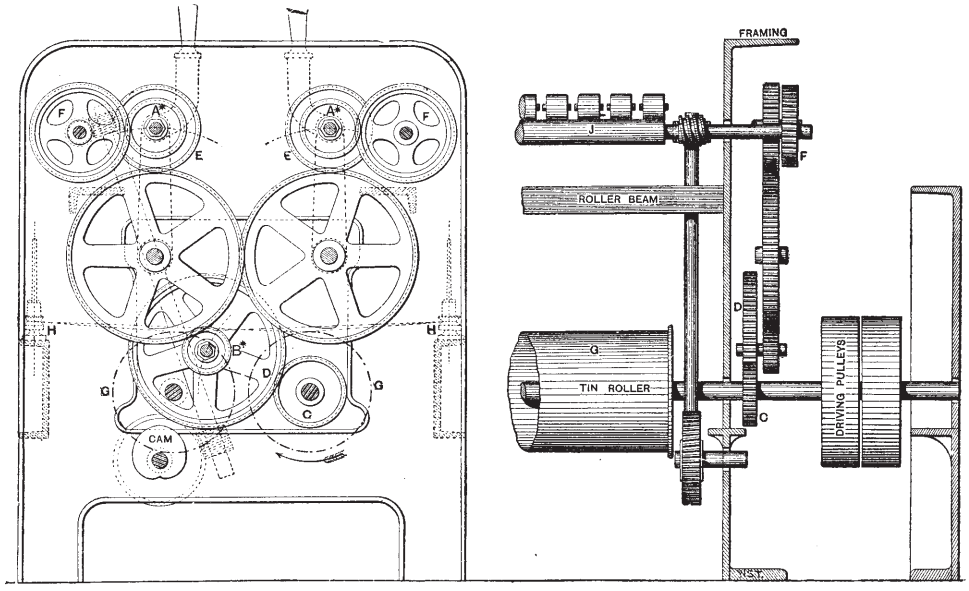


FIG. 188.