

# International Correspondence Schools Publications on Weaving and Textile Manufacture

## International Correspondence Schools

Starting in the 1890s the International Correspondence Schools (ICS) published thousands of monographs (my term — I.C.S. calls them instruction papers) on a wide range of topics, mostly designed for instruction in basic skill and trade occupations of interest at the time.

These monographs presumably were distributed as study material for correspondence courses, although I have not seen one as originally published. There is some duplication of material in monographs on similar subjects. Most monographs are identified by serial numbers. Some list authors, but most do not.

The monographs are substantial and many include detailed illustrations. They vary in length according to topic. The average length is about 40 pages. See Appendix A.

## Books

Starting in the early 1900s and continuing through the 1950s, these monographs were republished in books by the International Textbook Company in Scranton, Pennsylvania. See Appendices C and D.

Each book contains several monographs on related topics. In these books, the monographs are assembled as published, so the sections are separately paginated. The books were published under two series titles: **The International Library of Technology** (LT) and **The I.C.S. Reference Library** (RL). Some books in these series list specific authors, but most attribute authorship to “I.C.S. Staff”, and some have no indication of authorship at all. Most of the books do not show a publication date but they do list copyright dates for the contained monographs. See Appendices C, D, and E.

The series contain hundreds of volumes. The situation regarding the books in these series is confused by the fact that there are several different LT and RL series, but the different series are not identified in the books. From examining the books alone, it would appear there are only two series — at least until different books with the same volume number in the “same” series are encountered. For example, in one RL series, Volume 13 is **Steam Boilers** and in another RL series Volume 13 is **Mathematics of Masonry**.

Further complicating the issue is the fact that libraries and book sellers generally do not distinguish between the series (if in fact they know there is more than one), and in many cases they do not even distinguish between the LT and RL series. In fact, in some cases, the only mention of the series is buried in the preface of the book. Yet another problem is that some book titles are very long, listing the titles of most or all of the monographs contained in them. Libraries and book sellers usually truncate such titles, but some try to characterize the subject rather than use the actual title. Even volume numbers cause problems. They typically appear only on the spine (if not worn off) and as a number without the word volume in small type on the title page.

## Other Forms of Publication

In addition to the monographs and books, ICS republished several monographs as booklets and pamphlets of various sorts. I have seen instances of these but have not had the opportunity to examine them closely. The International Textbook company also published ICS monographs in books in which the ICS was not mentioned.

## Monographs Related to Weaving and Textile Manufacture

From the late 1890s until the mid 1950s, the topics covered by ICS included various aspects of weaving and textile manufacture. These later appeared in 55 volumes of the series mentioned above. The same monograph often appears in several different books.

### Book Listings

A considerable amount of information about the LT and RL books is available through on-line library catalogs, notably OCLC's WorldCat [1], the Public Catalog of the British Library [2], and the Library of Congress [3]. Information about individual monographs, on the other hand, is hard to come by; the only good source is the books in which they have been republished. I'll therefore start with the books and take up the individual monographs later.

The following tables list books that I know of in the LT and RL series. I have given the different series under each name arbitrary series numbers. In fact there seem to have been several series, sub-series, and "special series", although I have not found any coherent description of these.

Books that I have examined are indicated by underlined volume numbers. The authors' names are abbreviated as follows:

AJT	A. J. Traub
ALL	A. L. Landau
CJB	C. J. Brickett
CAL	Carl A. Lust
FRM	Frederick R. Mason
HER	Harold E. Reed
HRM	Herbert R. Mauserberger
ICS	I. C. S. Staff
JKS	John K. Stearns
IM	Ivar Moberg
PCG	Paul C. Grant, Jr.
RLH	Ralph Lenton Hill
TWL	Thomas W. Lawton

Since the RL and LT series use some of the same volume numbers, volume numbers in the RL series are shown in boldface. Question marks indicate lack of information.

<i>RL series 1 (1904-1909)</i>	<i>volume</i>	<i>author</i>	<i>date</i>
Ring Frames, Cotton Mules, ...	<b>72</b>	?	?
Mathematics, Yarn, Cloth and Draft ...	<b><u>86</u></b>	none listed	1906
Cotton, Pickers, Cards, ...	<b><u>87</u></b>	none listed	1906
Ring Frames, Cotton Mules, Twistors, ...	<b><u>88</u></b>	none listed	1906
Yarn, Cloth Rooms, ...	<b><u>89</u></b>	none listed	1906
Wool Scouring, Drying, ...	<b><u>90</u></b>	none listed	1906
Cam, Fancy and Automatic Looms, ...	<b><u>91</u></b>	none listed	1906
Weave Glossary, Fabric Analysis, ...	<b>92</b>	?	?

<i>RL series 2 (1909-?)</i>	<i>volume</i>	<i>author</i>	<i>date</i>
Mathematics, Calculations for Yarns, ...	<b>62</b>	?	?
Cotton Scutchers, Cards, Drawing Rollers, ...	<b>63</b>	?	?
Fly Frames, Ring Frames, ...	<b>64</b>	?	?
Wool Washing, Drying, Carding, ...	<b>65</b>	?	1905
Worsted Preparing, ...	<b>107</b>	?	?
Vertical Spindle Winding, ...	<b>130</b>	?	?
Plain Looms, ...	<b>131</b>	?	?

<i>LT Series 1 (1902-1906)</i>	<i>volume</i>	<i>author</i>	<i>date</i>
Calculations for Textile Work	?	?	1905
Cam, fancy and automatic looms, dobbies, ...	?	?	1906
Cotton	20	?	?
Ring Frames, Cotton Mules, ...	72	?	?
Cotton Pickers, Cotton Cards, ...	76	?	1906
Ring frames, Cotton Mules, Twisters, ...	77	?	1906
Yarns, Cloth Rooms, Mill Engineering, ...	78	?	1906
Wool, Wool Scouring, Wool Drying, ...	79	CJB	1906
Woolen and Worsted Cam Loom, ...	80	?	1906
Glossary of Weaves, ...	81	?	1906
Weave Glossary	89	?	?
Wool Scouring, Drying, ...	91	?	?
Yarns	92	?	?

<i>LT Series 2 (1932? -?)</i>	<i>volume</i>	<i>author</i>	<i>date</i>
Yarn, Cloth, and Draft Calculations	<u>1</u>	ICS	1943+
Yarn, Cloth, and Draft Calculations	<u>1B</u>	ICS	1942+
Yarns and Calculations	1D	AJT & JKS	?
Cotton Opening and Picking	<u>2</u>	TWL, PCG, CJB, & HER	1939+
Cotton Carding	<u>3</u>	HER & CJB	1939
Cotton Drawing, Combing, and Fly Frames, ...	<u>4</u>	RLH & ICS	1942+
Drawing and Roving Processes	<u>4B</u>	RLH, FRM, & ICS	1950+
Cotton Spinning	<u>5</u>	RLH & CJB	1940+
Cotton Spinning, Ring Framing, ...	5B	RLH & CJB	?
Spinning Cotton and Synthetic Fibers	<u>5C</u>	ALL & RLH	1952+
Winding and Twisting	<u>6B</u>	FMR & ALL	1948+
Cotton Warp Preparation	<u>7B</u>	ICS	1941+
Warping and Slashing	<u>7C</u>	ICS & ALL	1949+
Plain and Dobby Cotton Weaving	<u>8B</u>	ICS	1942+
Plain and Dobby Cotton Weaving	<u>8C</u>	ICS	1946+
Cotton Looms, Loom Principles, ...	<u>8D</u>	HER, IM, & ICS	1951+
Fancy Weaving and Cloths Rooms	<u>9</u>	ICS	1941+
Fancy Looms and Attachments	<u>9B</u>	ICS	1941+
Wool Preparation	10	ICS	1952

Wool Preparation	10B	?	1949
Woolen Carding and Spinning	11	?	1949
Woolen Carding and Spinning	<u>11B</u>	ICS	1949+
Woolen and Worsted Warp Preparation	12	?	1905
Woolen and Worsted Warp Preparation	<u>12B</u>	JKS	1949+
Weaving Construction and Cloth Analysis	<u>13</u>	ICS	1949
Fundamentals of Textile Designing	<u>13B</u>	ICS	1949+
Weave Construction and Color Effects	<u>14</u>	ICS	1934+
Advanced Textile Designing	14B	?	?
Advanced Textile Designing	<u>14C</u>	ICS	1948+
Rayon Yarn Calculations	15	?	?
Rayon Warp Preparation and Quilling	16	HRM	1943
Synthetic Fibers, Warping Slashing, Quilling	<u>16B</u>	JKS & HRM	1949+
Rayon Looms and Weaving	<u>17</u>	HRM & HER	1943
Rayon Looms and Weaving	<u>17B</u>	HRM & HER	1949+
Spinning Cotton and Synthetic Fibers	50	?	?
Cotton Carding, Combing,, ...	<u>76</u>	CJB	1925
Cotton Spinning and Warp Preparation	<u>77</u>	CJB	1906 (1932?)
Yarns, Cloth Rooms, and Mill Engineering	<u>78</u>	CJB	1935+
Woolen Yarn and Warp Preparation	<u>79</u>	CJB	1906+
Plain and Fancy Weaving	<u>80B</u>	CJB	1936?
Glossary of Weaves, Elementary ...	<u>81</u>	CJB	1934
Calculations for Textile Work	<u>327B</u>	CJB & CAL	1936

I have not seen an explanation of the letter suffixes on volume numbers, although the Library of Congress catalog mentions "Special Series B". In some cases books with a suffixes have different titles but are on the same topic as a book without the suffix.

Notes: LT Volume 76 and RL Volume 87 have the same contents.  
 LT Volume 77 and RL Volume 88 have the same contents.  
 LT Volume 78 and RL Volume 89 have the same contents.  
 LT Volume 79 and RL Volume 90 have the same contents.

## Monograph Listings

Some books that have monographs related to weaving or textiles also have monographs on unrelated topics. In the tables below, I have omitted monographs not related to weaving or textiles.

Some monographs with the same title and serial number are listed with two different copyright dates. The one with the later date presumably is a revision of the former, although in some cases, identical monographs carry very different copyright dates, such as 1905 and 1935.

These lists contain only those monographs that appear in books I have access to or are specifically listed in a library catalog. As mentioned earlier, volume numbers in boldface are from the RL series.

<i>name</i>	<i>serial</i>	<i>author</i>	<i>dates</i>
Analysis of Cotton Fabrics	503		1905
Analysis of Woolen and Worsted Fabrics	504		1905, 1947
Automatic Looms	?		1900
Beam Warpers	?		1905
Beam Warping	5769		1948
Box Motions	497		1905
Burr Picking	472		1905
Carbonizing	5542		1905, 1952
Burring and Carbonizing	?		1905
Chain Warping, Part 1	642A		1905
Chain Warping, Part 2	642B		1905
Cloth Analysis	6021		1949
Cloth Calculations, Cotton	459		1905
Cloth Calculations, Woolen and Worsted	?		1905
Cloth Calculations, Woolen and Worsted	460		1905
Cloth Rooms, Part 1	?		1905
Cloth Rooms, Part 2	?		1905
Cloth Rooms, Part 1	500A		1905, 1935
Cloth Rooms, Part 2	500B		1905
Color in Textile Designing, Part 1	514A		1905, 1934
Color in Textile Designing, Part 2	514B		1905, 1934
Color in Textile Designing, Part 3	514C		1905
Combers, Part 1	?		1905
Combers, Part 2	?		1905
Combers, Part 1	467A		1905
Combers, Part 2	467B		1905
Combination Weaves	508		1905, 1949
Construction of Spot Weaves	509		1905
Conventional Roving Processes	468-1		1950
Cotton	?		1905
Cotton	2406		1930
Cotton Cards, Part 1	?		1905
Cotton Cards, Part 2	?		1905
Cotton Cards, Part 1	464A		1905
Cotton Cards, Part 2	464B		1905
Cotton Cards, Part 3	464C		1905
Cotton Cards, Part 4	464D		1939
Cotton Mules, Part 1	479A		1901
Cotton Mules, Part 1	479B		1901
Cotton Opening and Picking	5357		1939
Cotton Slashing, Part 1	5473A		1941
Cotton Slashing, Part 2	5473B		1941
Cotton Slashing, Part 1	5473A-1		1941
Cotton Slashing, Part 2	5473B-1		1941
Crompton and Knowles Rayon Looms	5611		1943, 1949
Designing in General	515		1905

Dobbies	495	1905
Draft Calculations	462	1903, 1932
Draper High-Speed Looms	5499	1948
Draper Rayon Looms	5610	1943
Drawing Frames	5544-1	1947
Drawing Rolls	?	1903
Drawing Rolls	5524	1942
Elementary Textile Designing	502	1905
Elementary Textile Designing	6018	1948
Fixing Looms	492	1903
Fancy Warping	?	1949
Fly Frames, Part 1	?	1905
Fly Frames, Part 2	?	1905
Fly Frames, Part 3	?	1905
Fly Frames, Part 1	468A	1905
Fly Frames, Part 2	468B	1905
Fly Frames, Part 3	468C	1905
Glossary of Weaves	501	1905
Jacquards, Part 1	498A	1905
Jacquards, Part 1	5516A	1941
Jacquards, Part 2	498B	1905
Jacquards, Part 3	498C	1905
Leno Attachments	496	1905
Leno Weaves	512	1905
Leno Weaving	5964-1	1948
Long Draft Roving Processes	5235	1940
Long-Draft Spinning	5234	1950
Loom Operation	5741	1946
Loom Operation	5741-1	1951
Loom Attachments	493	1903
Loom Principles	5543	1942, 1950
Man-Made Fibers	6069	1949
Mechanical Calculations	455	1930
Mechanical Calculations	5608	1943
Mechanical Definitions	454	1930
Mill Engineering, Part 1	?	1905
Mill Engineering, Part 2	?	1905
Mill Engineering, Part 3	?	1905
One-Process Picking, Part 1	5233A	1937
One-Process Picking, Part 2	5233B	1937
Opening and Mixing	?	1905
Pickers, Part 1	463A	1905
Pickers, Part 2	463B	1905
Pile Weaves	513	1905
Plain Looms	491	1903
Ply Fabrics	511-1	1950
Quilling	5770	1947

Railway Heads and Drawing Frames	466	1905
Rayon Quilling	5609	1943
Rayon Slashing, Part 1	5474A	1941
Rayon Slashing, Part 2	5474B	1941
Rayon Warping	5575	1943
Rayon Weaving	5503	1941
Rayon Yarn Calculations	5545	1942
Rayon Yarns	5498	1941
Reeling and Bailing	?	1905
Reeling and Bailing	488	1905
Reading Textile Drawings	?	1905
Reading Textile Drawings	518	1932
Ring Frames	?	1900
Ring Frames, Part 1	478A	1905, 1949
Ring Frames, Part 2	478B	1905, 1949
Ring Frames, Part 3	478C	1949
Satin and Other Weaves	507	1905
Silk Testing, Part 1	5001A	1925?
Silk Testing, Part 2	5001B	1925
Silk Testing, Part 3	5001C	1925
Silk Throwing, Part 1	5002A	1924
Silk Throwing, Part 2	5002B	1924
Silk Throwing, Part 3	5002C	1924
Silk Throwing, Part 4	5002D	1924
Silk Throwing, Part 5	5002E	1924
Silk Throwing, Part 6	5002F	1925
Silk Throwing, Part 7	5002G	1924
Silk Throwing, Part 8	5002H	1925
Silk Throwing, Part 9	5002I	1925
Silk Throwing, Part 10	5002J	1925
Silk Yarn Calculations	?	1925
Silk Yarn Calculations	5011	1925
Slashers	484	1905
Spinning Synthetic Fibers on the Cotton System	6074	1952
Spoolers	482	1903
The Northrop Loom, Part 1	1764A	1918
The Northrop Loom, Part 2	1764B	1918
Twill Weaves and Derivatives	506	1905
Twisters	?	1905
Twisters	5954	1948
Weaves for Backed Cotton Fabrics	510	1905
Weaving Rayon Fabrics	5607	1943
Winding	?	1953
Winding	488	1935
Winding and Spooling	5771	1948
Wool	469	1905
Wool Drying	471	1905, 1946
Wool Mixing	474	1905

Wool Oiling	475	1905
Wool Oils and Oiling	?	1905
Wool Preparation	5842	
Wool Washing	?	1905
Wool Scouring	470	1905
Woolen and Worsted Cam Looms	486	1905
Woolen and Worsted Fancy Looms	487A	1905
Woolen and Worsted Loom Fixing	490	1905
Woolen and Worsted Ply Weaves	511	1905
Woolen and Worsted Warp Preparation, Part 1	?	1903
Woolen and Worsted Warp Preparation, Part 2	?	1903
Woolen Carding	?	1905
Woollen Carding, Part 1	?	1905
Woollen Carding, Part 2	?	1905
Woollen Carding, Part 3	?	1905
Woolen Spinning	?	1905
Woolen Carding	5546B	1946
Yarn Calculations, Cotton	?	1905
Yarn Calculations, Cotton	456-2	1929
Yarn Calculations, Cotton	5541	1942
Yarn Calculations, General	?	1901
Yarn Calculations, General	?	1905
Yarn Calculations, General	458	1905
Yarn Calculations, Woolen and Worsted	457-2	1905, 1930
Yarns, Part 1	?	1905
Yarns, Part 2	?	1905
Yarns, Part 1	480A-2	1934
Yarns, Part 2	480B	1905

The following table lists the volumes in which monographs are known to appear. The monographs are ordered by serial number, so this table provides numerical lookup also.

<i>name</i>	<i>serial</i>	<i>volumes</i>
Automatic Looms	?	<b>91</b>
Beam Warpers	?	<b>77, 88</b>
Cotton	?	<b>76, 87</b>
Drawing Rolls	?	<b>76, 87</b>
Mill Engineering, Part 1	?	<b>78, 89</b>
Mill Engineering, Part 2	?	<b>78, 89</b>
Mill Engineering, Part 3	?	<b>78, 89</b>
Pickers, Part 1	?	<b>76, 87</b>
Pickers, Part 2	?	<b>76, 87</b>
Ring Frames	?	<b>77, 88</b>
Woolen Carding, Part 1	?	<b>79, 90</b>
Woolen Carding, Part 2	?	<b>79, 90</b>
Woolen Carding, Part 3	?	<b>79, 90</b>
Woolen and Worsted Warp Preparation, Part 1	?	<b>79, 90</b>



Woolen and Worsted Warp Preparation, Part 2	?	79, <b>90</b>
Woolen Carding, Part 1	?	79, <b>90</b>
Woolen Carding, Part 2	?	79, <b>90</b>
Woolen Carding, Part 3	?	79, <b>90</b>
Woolen Spinning	?	79, <b>90</b>
Yarn Calculations, Cotton	?	<b>86</b>
Yarn Calculations, Woolen and Worsted	?	<b>86</b>
Mechanical Definitions	454	327B, <b>86</b>
Mechanical Calculations	455	327B, <b>86</b>
Yarn Calculations, Cotton	456-2	327B
Yarn Calculations, Woolen and Worsted	457-2	1, 1B, 327B
Yarn Calculations, General	458	1, 1B, 327B, <b>86</b>
Cloth Calculations, Cotton	459	1, 1B, 327B, <b>86</b>
Cloth Calculations, Woolen and Worsted	460	1, 1B, 327B, <b>86</b>
Draft Calculations	462	1, 1B, 327B, <b>86</b>
Pickers, Part 1	463A	2
Pickers, Part 2	463B	2
Cotton Cards, Part 1	464A	3, 76, <b>87</b>
Cotton Cards, Part 2	464B	3, 76, <b>87</b>
Cotton Cards, Part 3	464C	3
Cotton Cards, Part 4	464D	3
Railway Heads and Drawing Frames	466	4, 76, <b>87</b>
Combers, Part 1	467A	4, 76, <b>87</b>
Combers, Part 2	467B	4, 76, <b>87</b>
Fly Frames, Part 1	468A	4, 76, <b>87</b>
Fly Frames, Part 2	468B	4, 76, <b>87</b>
Fly Frames, Part 3	468C	4, 76, <b>87</b>
Conventional Roving Processes	468-1	4B
Wool	469	10, 79, <b>90</b>
Wool Scouring	470	10, 79, <b>90</b>
Wool Drying	471	10, 79, <b>90</b>
Burr Picking	472	10, 79, <b>90</b>
Wool Mixing	474	10, 79, <b>90</b>
Wool Oiling	475	10, 79, <b>90</b>
Ring Frames, Part 1	478A	5, 5C
Ring Frames, Part 2	478B	5, 5C
Ring Frames, Part 3	478C	5, 5C
Cotton Mules, Part 1	479A	<b>5, 77, 88</b>
Cotton Mules, Part 2	479B	<b>5, 77, 88</b>
Yarns, Part 1	480A-2	78, <b>89</b>
Yarns, Part 2	480B	78, <b>89</b>
Spoolers	482	7B, 77, <b>88</b>
Slashers	484	<b>77, 88</b>
Woolen and Worsted Cam Looms	486	80B, <b>91</b>
Woolen and Worsted Fancy Looms	487A	80B, <b>91</b>
Reeling and Bailing	488	78, <b>89</b>
Winding	489	78, <b>89</b>
Woolen and Worsted Loom Fixing	490	80B, <b>91</b>

Plain Looms	491	80B, <b>91</b>
Fixing Looms	492	8B, 80B, <b>91</b>
Loom Attachments	493	80B, <b>91</b>
Dobbies	495	8B, 8C, 9B, 80B, <b>91</b>
Leno Attachments	496	9, 80B, <b>91</b>
Box Motions	497	9, 9B, 80B, <b>91</b>
Jacquards, Part 1	498A	80B, <b>91</b>
Jacquards, Part 2	498B	9, 9B, 80B, <b>91</b>
Jacquards, Part 3	498C	9, 9B, 80B, <b>91</b>
Cloth Rooms, Part 1	500A	9, 78, <b>89</b>
Cloth Rooms, Part 2	500B	9, 78, <b>89</b>
Glossary of Weaves	501	13, 13B, 14C
Elementary Textile Designing	502	13
Analysis of Cotton Fabrics	503	13
Analysis of Woolen and Worsted Fabrics	504	13
Twill Weaves and Derivatives	506	13, 13C
Satin and Other Weaves	507	13, 13C
Combination Weaves	508	13, 13B
Construction of Spot Weaves	509	13
Weaves for Backed Cotton Fabrics	510	13
Woolen and Worsted Ply Weaves	511	14
Ply Fabrics	511-1	14C
Leno Weaves	512	14
Pile Weaves	513	14, 14C
Color in Textile Designing, Part 1	514A	14, 14C
Color in Textile Designing, Part 2	514B	14, 14C
Color in Textile Designing, Part 3	514C	14, 14C
Designing in General	515	14
Reading Textile Drawings	518	327B, <b>86</b>
Chain Warping, Part 1	642A	7B, 77, <b>88</b>
Chain Warping, Part 2	642B	7B, 77, <b>88</b>
The Northrop Loom, Part 1	1764A	8B, 8C, 80B
The Northrop Loom, Part 2	1764B	8B, 8C, 80B
Cotton	2406	2
Silk Testing, Part 1	5001A	?
Silk Testing, Part 2	5001B	?
Silk Testing, Part 4	5001C	?
Silk Throwing, Part 1	5002A	?
Silk Throwing, Part 2	5002B	?
Silk Throwing, Part 3	5002C	?
Silk Throwing, Part 4	5002D	?
Silk Throwing, Part 5	5002E	?
Silk Throwing, Part 6	5002F	?
Silk Throwing, Part 7	5002G	?
Silk Throwing, Part 8	5002H	?
Silk Throwing, Part 9	5002I	?
Silk Throwing, Part 10	5002J	?

Silk Yarn Calculations	5011	1, 327B
One-Process Picking, Part 1	5233A	2
One-Process Picking, Part 2	5233B	2
Long-Draft Spinning	5234	5, 5C
Long Draft Roving Processes	5235	4, 4B
Cotton Opening and Cleaning	5357	2
Cotton Slashing, Part 1	5473A	7B, 7C
Cotton Slashing, Part 2	5473B	7B, 7C
Rayon Slashing, Part 1	5474A	16B
Rayon Slashing, Part 2	5474B	16B
Rayon Yarns	5498	?
Draper High-Speed Looms	5499	8D
Rayon Weaving	5503	17, 17B
Jacquards, Part 1	5516A	9, 9B
Drawing Rolls	5524	4, 4B
Yarn Calculations, Cotton	5541	1, 1B
Carbonizing	5542	10, 79, <b>90</b>
Loom Principles	5543	8B, 8C, 8D, 17
Drawing Frames	5544-1	14B
Rayon Yarn Calculations	5545	?
Woolen Carding	5546B	?
Rayon Warping	5575	16B
Weaving Rayon Fabrics	5607	17, 17B
Mechanical Calculations	5608	1, 1B
Rayon Quilling	5609	16B
Draper Rayon Looms	5610	17, 17B
Crompton and Knowles Rayon Looms	5611	17, 17B
Loom Operation	5741	8C
Loom Operation	5741-1	8D
Beam Warping	5769	7C
Quilling	5770	6B
Winding and Spooling	5771	6B
Wool Preparation	5842	?
Twisters	5954	6B, 77, <b>88</b>
Leno Weaving	5964-1	14C
Elementary Textile Designing	6018	13B
Cloth Analysis	6021	13B
Man-Made Fibers	6069	16B
Spinning Synthetic Fibers on the Cotton System	6074	5C

## Finding ICS Books and Monographs

Since most of the monographs and the volumes containing them were distributed to individuals taking correspondence course, relative few volumes can be found in libraries. The best source is used book dealers. Hundreds of ICS books are listing in on-line used book search services, such as ABE [5].

The difficulty in locating specific books is that book dealers generally provide very little information in the on-line listings. The best way to search is by book title and author as listed

here. If the search engine allows search on publishers, as ABE does, listing International Textbook as publisher considerably simplifies searches.

### Monographs Available On-Line

All monographs that are clearly free of copyright will be scanned and put in the **Monographs** section of the **On-Line Digital Archive of Weaving Documents** [6]. This project, however, does not have high priority, so it may be some time before all appear in the archive. Here are the monographs currently available on-line(mult-ipart subjects are consolidated):

<i>name</i>	<i>serial</i>
Wool	469
Wool Scouring	470
Wool Drying	471
Spoolers	482
Woolen and Worsted Cam Looms	486
Woolen and Worsted Fancy Looms	487
Woolen and Worsted Loom Fixing	490
Plain Looms	491
Loom Fixing	492
Loom Attachments	493
Dobbies	495
Leno Attachments	496
Box Motions	497
Jacquards	498
Cloth Rooms	500
Glossary of Weaves	501
Elementary Textile Designing	502
Analysis of Cotton Fabrics	503
Analysis of Woolen and Worsted Fabrics	504
Twills and Derivatives	506
Satin and Other Weaves	507
Combination Weaves	508
Construction of Spot Weaves	509
Weaves for Backed Cotton Fabrics	510
Woolen and Worsted Ply Weaves	511
Leno Weaves	512
Pile Weaves	513
Color in Textile Designing	514
Designing in General	515
Chain Warping	642
The Northrop Loom	1764
Silk Testing, Part 2	5001B
Silk Testing, Part 3	5001C
Silk Throwing, Part 1	5002A
Silk Throwing, Part 2	5002B
Silk Throwing, Part 3	5002C

Silk Throwing, Part 4	5002D
Silk Throwing, Part 5	5002E
Silk Throwing, Part 6	5002F
Silk Throwing, Part 7	5002G
Silk Throwing, Part 8	5002H
Silk Throwing, Part 9	5002I
Silk Throwing, Part 10	5002J

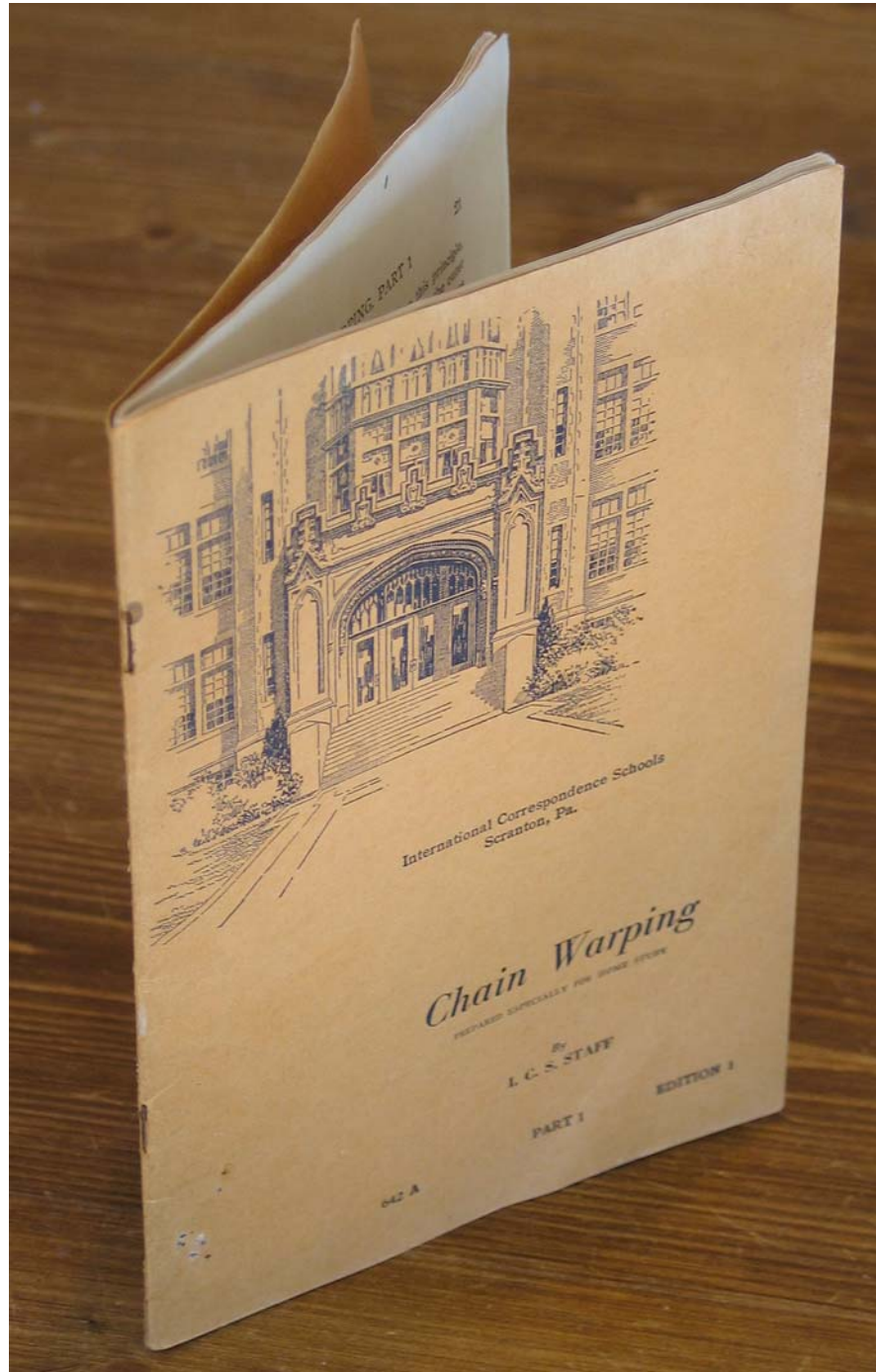
## References

1. <http://www.oclc.org/worldcat/>
2. <http://blpc.bl.uk/>
3. <http://catalog.loc.gov/>
4. <http://www.gatech.edu/libraries/>
5. <http://www.abebooks.com/>
6. <http://www.cs.arizona.edu/patterns/weaving/weavedocs.html>

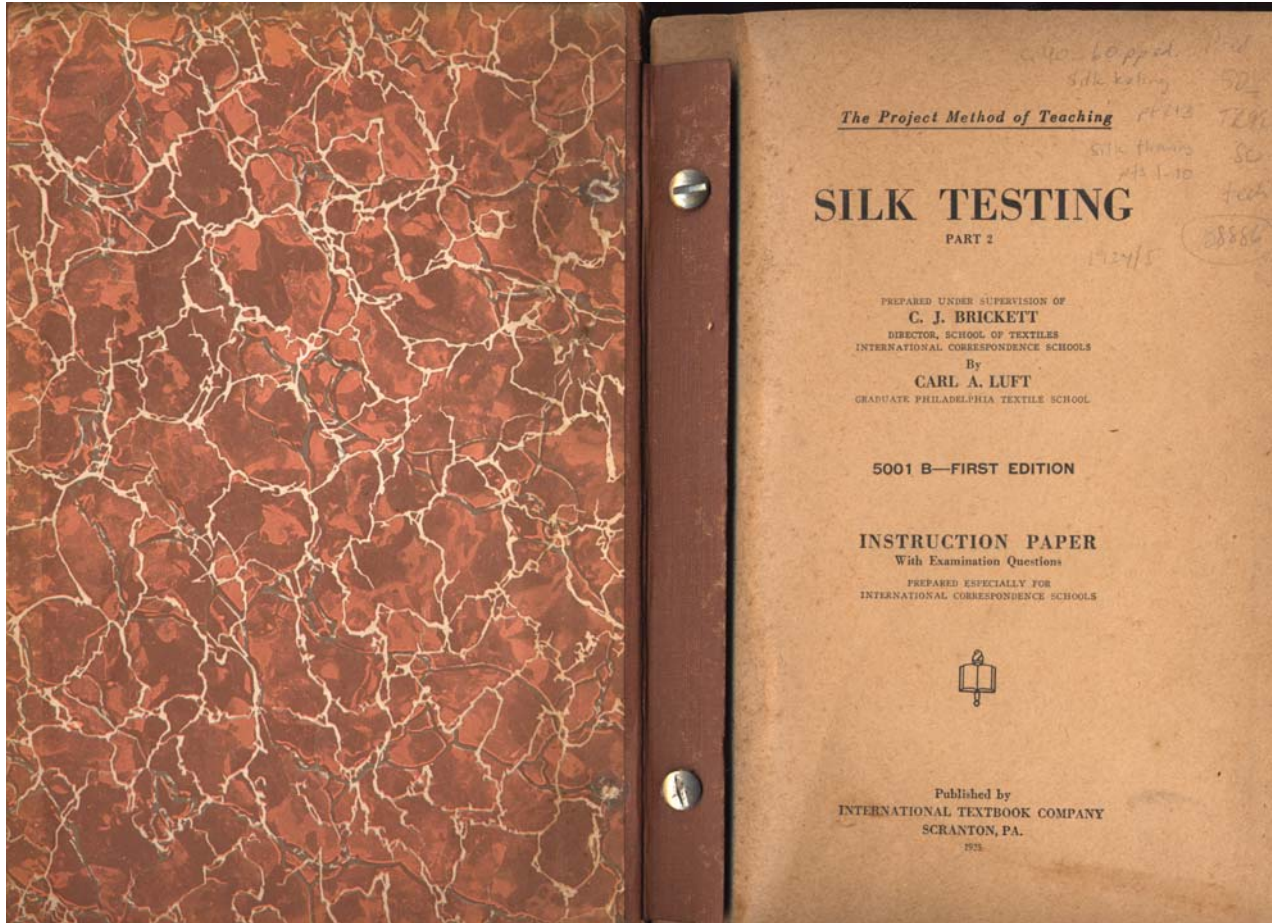
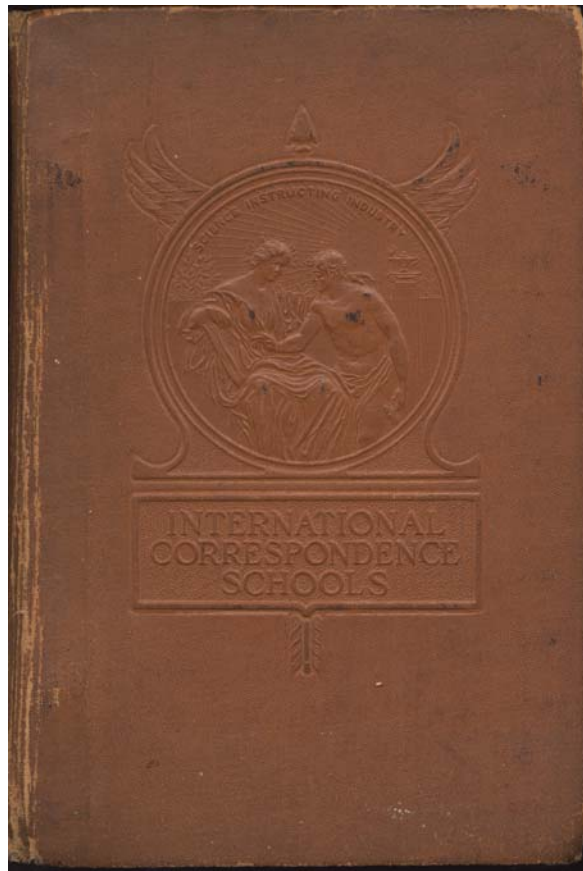
Ralph E. Griswold  
Department of Computer Science  
The University of Arizona  
Tucson, Arizona

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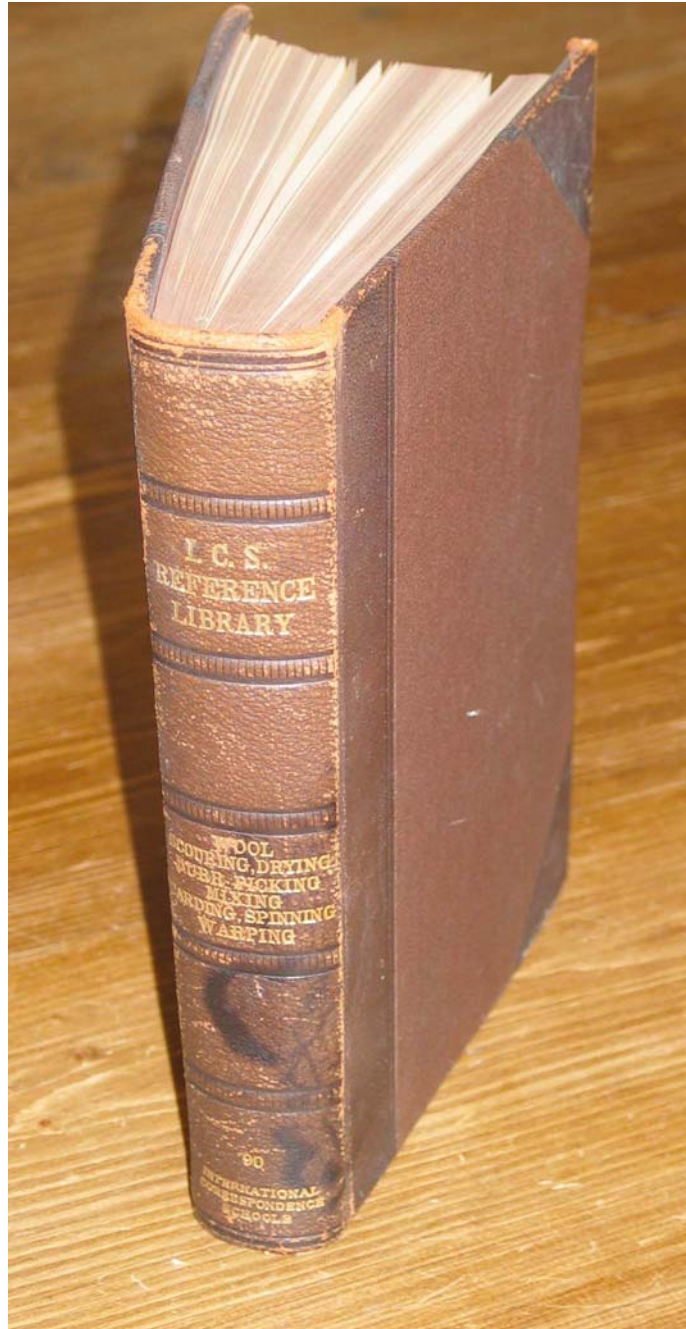
# Appendix A — Typical Monograph Format



# Appendix B — Example of Monographs Distributed in Post Binders

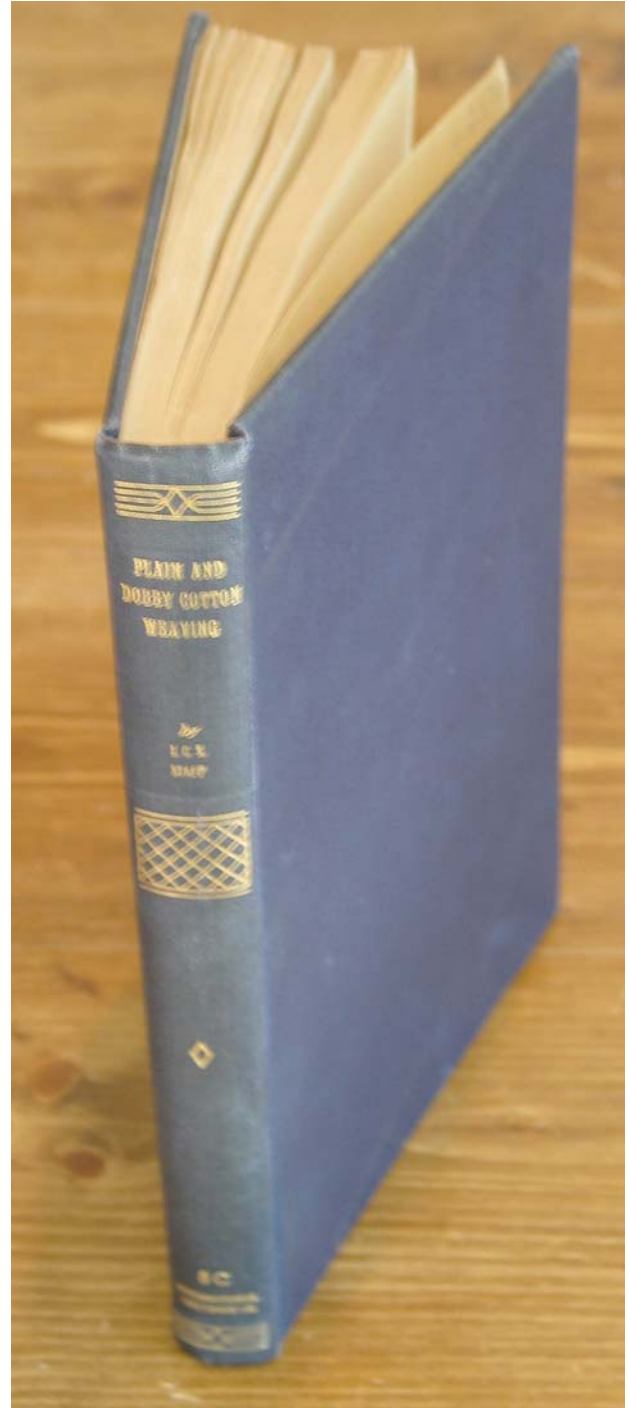
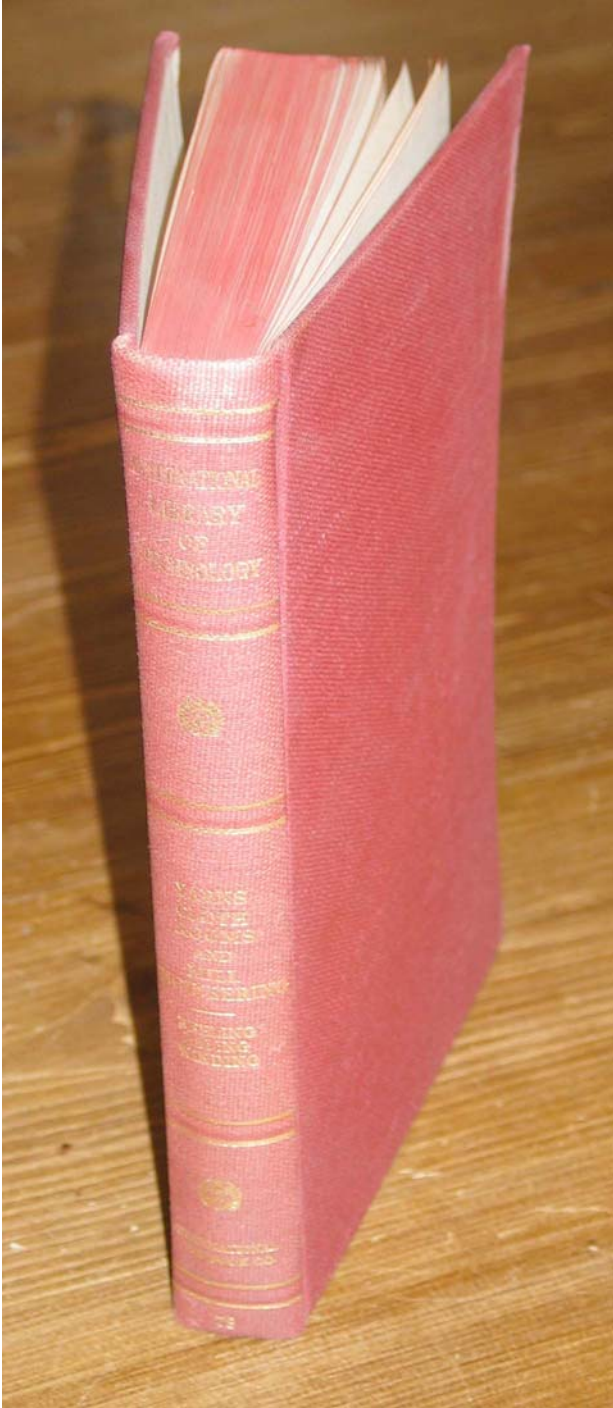


## Appendix C — Typical RL Volume

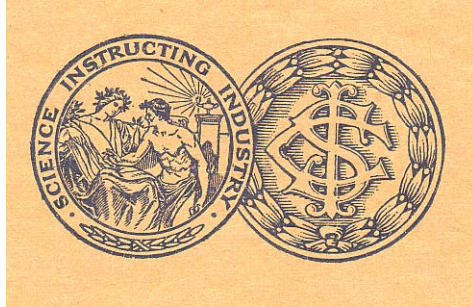




## Appendix D — Typical LT Volumes



## Appendix E — ICS Images

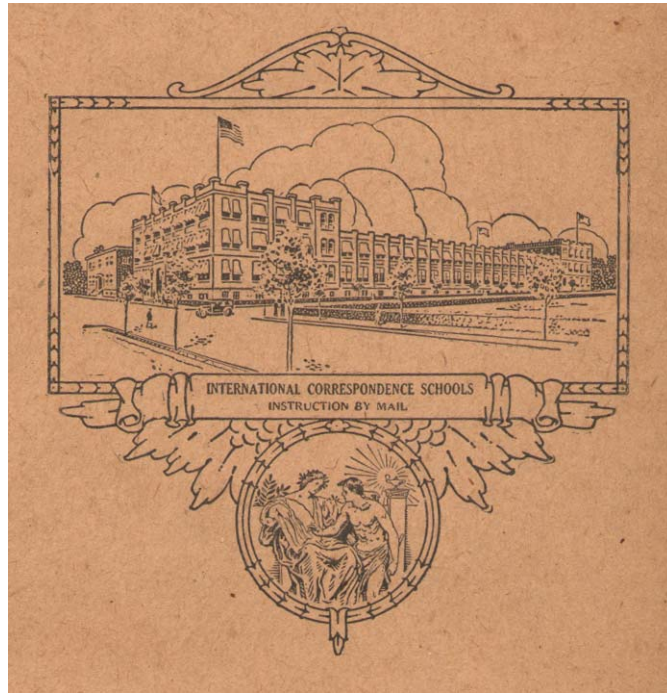


logo

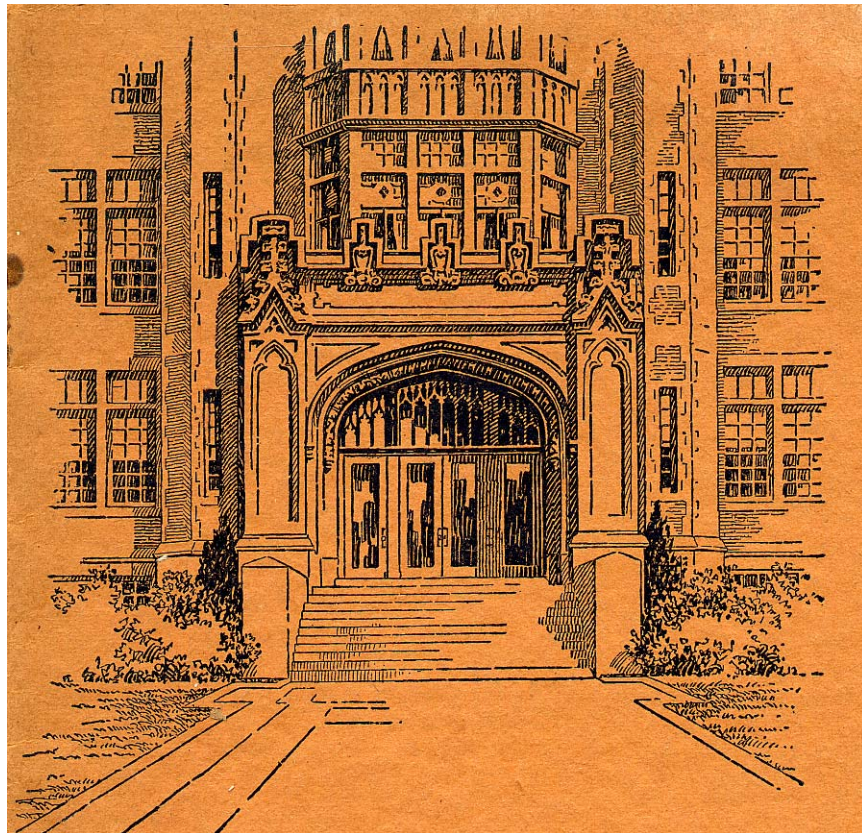


watch fob

## Appendix E — ICS Images

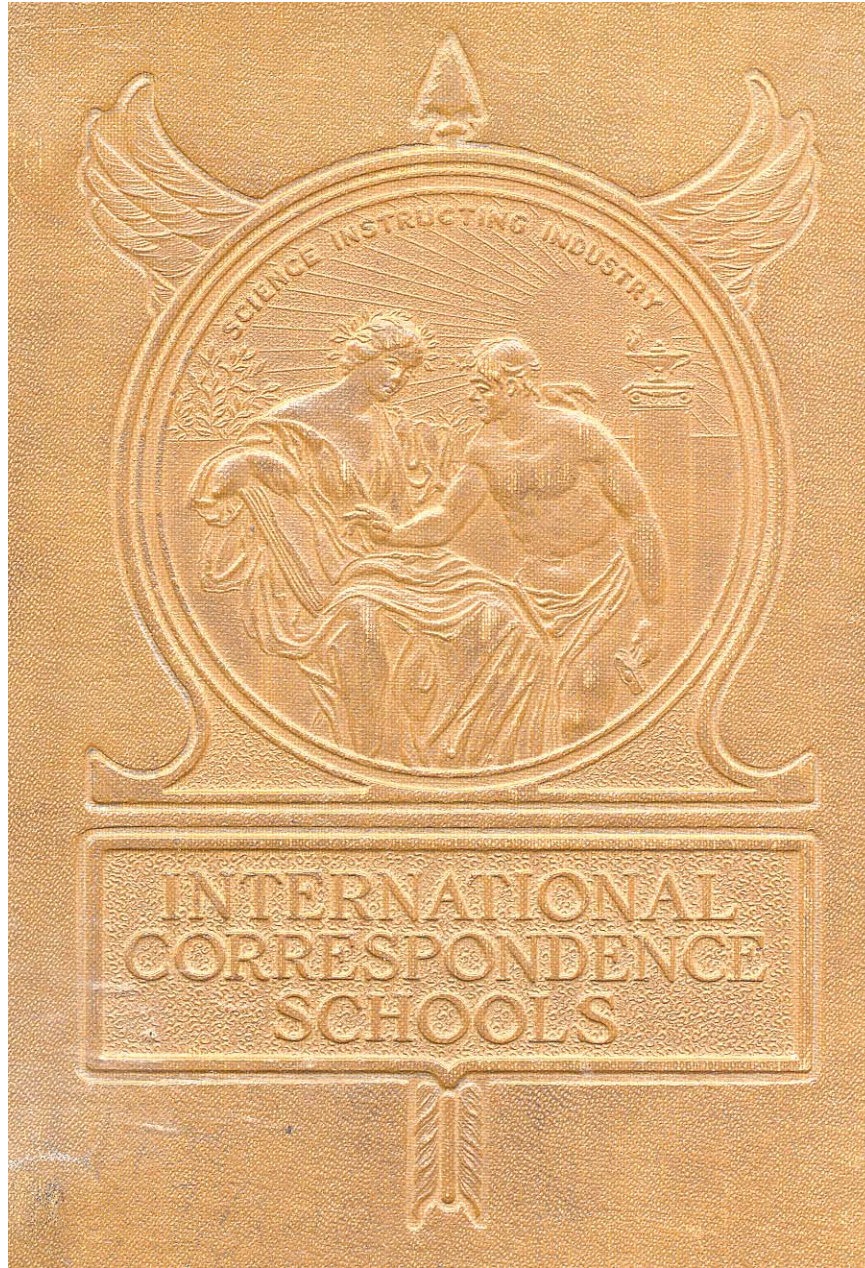


monograph back cover



monograph front cover

## Appendix E — ICS Images



post binder front cover



ADMINISTRATION BUILDING



INSTRUCTION BUILDING AND PRINTERY



SCIENCE INSTRUCTING INDUSTRY



## Appendix F — Preface to RL Volume

Formerly it was our practice to send to each student entitled to receive them a Set of volumes printed and bound especially for the course for which the student enrolled. In consequence of the vast increase in the enrollment, this plan became no longer practicable and we therefore concluded to issue a single set of volumes, comprising all our textbooks, under the general title of I. C. S. Reference Library. The students receive such volumes of this Library as contain the instruction to which they are entitled. Under this plan some volumes contain one or more papers not included in the particular Course for which the student enrolled, but in no case are any subjects omitted that form a part of such Course. This plan is particularly advantageous to those students who enroll for more than one Course, since they no longer receive volumes that are, in some cases, practically duplicates of those they already have. This arrangement also renders it much easier to revise a volume and keep each subject up to date.

Each volume in the Library contains, in addition to the text proper, the Examination Questions and (for those subjects in which they are issued) the Answers to the Examination Questions.

In preparing these textbooks, it has been our constant endeavor to view the matter from the student's standpoint, and try to anticipate everything that would cause him trouble. The utmost pains have been taken to avoid and correct any and all ambiguous expressions—both those due to faulty rhetoric and those due to insufficiency of statement or explanation. As the best way to make a statement, explanation, or description clear is to give a picture or a diagram in connection with it, illustrations have been used almost without limit. The illustrations have in all cases been adapted to the requirements of the text, and projections and sections or outline, partially shaded, or full-shaded perspectives have been used, according to which will best produce the desired results.

The method of numbering pages and articles is such that each part is complete in itself; hence, in order to make the indexes intelligible, it was necessary to give each part a number. This number is placed at the top of each page, on the headline, opposite the page number; and to distinguish it from the page number, it is preceded by a section mark (§). Consequently, a reference, such as § 3, page 10, can be readily found by looking along the inside edges of the headlines until § 3 is found, and then through § 3 until page 10 is found.

# Appendix G — Advice to Students

## ADVICE TO THE STUDENT

You learn only by thinking. Therefore, read your lesson slowly enough to think about what you read and try not to think of anything else. You cannot learn about a subject while thinking about other things. Think of the meaning of every word and every group of words. Sometimes you may need to read the text slowly several times in order to understand it and to remember the thought in it. This is what is meant by study.

Begin with the first line on page 1 and study every part of the lesson in its regular order. Do not skip anything. If you come to a part that you cannot understand after careful study, mark it in some way and come back to it after you have studied parts beyond it. If it still seems puzzling, write to us about it on one of our Information Blanks and tell us just what you do not understand.

Pay attention to words or groups of words printed in **black-face type**. They are important. Be sure that you know what they mean and that you understand what is said about them well enough to explain them to others.

Rules are printed in *italics*; they, too, are important; you should learn to repeat them without looking at the book. With rules are usually given *Examples for Practice*. Work all of these examples according to the rules, but do not send us your work if you are able to get the right answers. If you cannot get the correct answer to an example, send us all of your work on it so that we can find your mistakes. Use one of our Information Blanks.

After you have finished studying part of a lesson, review that part; that is, study it again. Then go on with the next part. When you have finished studying an Instruction Paper, review all of it. Then answer the Examination Questions at the end of the Paper. It is not well to look at these questions until you have finished studying and reviewing the whole Paper.

Answer the Examination Questions in the same order as they are given and number your answers to agree with the question numbers. Do not write the questions. If you cannot answer a question, write us about it on an Information Blank before you send in any of your answers.

Remember that we are interested in your progress and that we will give you by correspondence all the special instruction on your Course that you may need to complete it. Remember, too, that you will get more good from your Course if you learn all that you can without asking for help.

[12]

INTERNATIONAL CORRESPONDENCE SCHOOLS

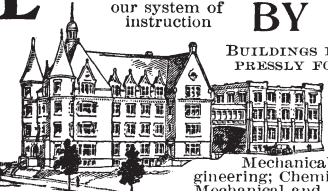
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# Appendix H — Advertisements

**EDUCATION** Thousands have been helped to better pay and positions through our system of instruction **BY MAIL**



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Ladies' Home Journal, 1898

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TEXTILE DEPARTMENT

**International Correspondence Schools**

NEW BEDFORD, MASS.

BOX 697

Practical Loom Fixing, Albert Ainley, 1907

# Appendix I — Encyclopedia Article from *The Americana*, 1903

## CORRESPONDENCE SCHOOLS

### Correspondence Schools, International.

The development of a great educational system by correspondence was a process of evolution from a small beginning, the primary incentive being a mining catastrophe of more than usual magnitude.

On 6 Sept. 1869, at the Avondale Colliery near Plymouth, Pa., a large frame breaker structure which was erected over the shaft was burned while the workmen were in the mine. The shaft was the only opening to the mine, and all of the men and boys in the mine, one hundred and eight in all, perished by asphyxiation. As this was the first great catastrophe in the mines of America it created a profound feeling of sympathy for the mine workers, and made evident the dangers surrounding them. During the following winter the legislature of Pennsylvania passed an act providing for the safety of miners, which required that all anthracite mines in the State should have two openings, and provided various other safeguards. Another act provided for the employment of mine inspectors for each of the coal fields. This first mine law was very crude and imperfect.

In 1885 the mine laws were amended, and a provision incorporated requiring that all inside foremen thereafter appointed at any anthracite mine in Pennsylvania, should be required to pass an examination before a board of examiners, and to obtain a certificate of qualification before they could legally take charge of the inside workings of a mine. Practically all of the mine workers were men of very limited education, although many of them were men of more than average intelligence. Naturally the more ambitious among the miners desired the pleasanter work and increased remuneration of a mine official and they endeavored to equip themselves to pass the examination and secure certificate of competency.

The text-books on the theories involved in coal mining at that time were very few, and the best of them were by English writers and dealt more particularly with conditions in English coal fields. In addition, most of these books on mining were written by men of considerable education and the authors presupposed the users of the books would have sufficient elementary education to understand them. Ambitious miners purchased these books and endeavored by careful reading to fit themselves for the examination. In their studies, they met many formulas which, while comparatively simple to the educated man, were stumbling blocks to them. There were also many principles explained in language which was beyond their comprehension.

At this time Mr. Thomas J. Foster was publishing a technical paper devoted to coal mining called 'The Colliery Engineer.' He conducted in this paper a Correspondence Department, and men who were endeavoring to learn from text-

books made use of this department in asking for explanations of formulas and principles which they did not understand.

In the course of time a similar law was enacted for the bituminous coal fields of Pennsylvania, and from time to time other States enacted similar mining laws. As the coal mining industry rapidly developed, and the number of States requiring the examination of men aspiring to the position of mine foremen increased, there was a corresponding increase in the number of inquiries sent to the correspondence department of 'The Colliery Engineer.' The circulation of the publication was largely increased, and, as it was advisable to broaden its scope and make it a more influential publication, a corporation was organized in 1890, under the laws of Pennsylvania, known as "The Colliery Engineer Company" with a full paid capital of \$100,000, which took over the publication, enlarged it and put it in a prominent place among the trade publications of the country. Mr. Foster, who had been the previous owner, became manager of the company, and managing editor of the publication.

The increase in the number of inquiries sent to the correspondence department was so great as to threaten to crowd out of the columns of the publication other important mining matter, and many inquirers requested answers to their questions by a return, or early mail, preferring to pay a special fee for the replies rather than to wait for the next issue of the publication. In 1891 this state of affairs suggested to Mr. T. J. Foster the idea of preparing an elementary course in coal mining, which would cover the subjects embraced in the examination for mine foremen. It was estimated that if a certain number of men enrolled as students in such a course, the expense of writing and publishing the instruction papers would be met, and the course would prove a valuable adjunct to the publication. In the first year more than four times as many men enrolled for this coal mining course as was estimated, and, as a result, it was decided to make the course somewhat more comprehensive.

Additional matter on the care and handling of mining machinery was incorporated in the course, and a new department was added to the business of the company, that is, the school department. This department was known as the Correspondence School of Mines. The success met with by this school resulted in inquiries for correspondence courses from other classes of artisans, and from time to time, there were added courses in mechanics, electricity, architecture, chemistry, civil engineering, sanitary engineering, etc., etc., and a trade name was adopted so that instead of being known as the Correspondence School of Mines, the combined schools were known as the International Correspondence Schools.

The rapid development of this work required additional capital, and the capital of the company was increased until it now has a paid in capital of \$4,000,000. A large portion of the capital was required to pay the cost of writing, illustrating, and editing the instruction papers. These instruction papers are a main feature of the system, and have been prepared by the best available talent. They are pamphlets averaging about fifty pages each, and are adapted for the par-

particular course in which they are used. The student begins with the most elementary subjects — Arithmetic in most cases — and then proceeds in regular order through all the papers in the course. The instruction papers for each course contain only such information as is necessary for the student to have in order to understand the subject he is studying. These courses, being prepared for those engaged in learning or pursuing a trade, are made plain and simple, so that the student can study at home without the aid of a teacher. Each instruction paper sent the student is accompanied by a question paper, the questions being so framed as to draw from the student such answers as will show whether or not he understands the principles involved. After studying the instruction paper he takes the question paper and writes out the answers. These are sent to the schools at Scranton, Pa., where they are corrected and returned to the student. If a passing mark is secured he takes up the next instruction paper. If a passing mark is not secured he is required to study his first paper again, and is kept at the work until he does reach the proper standard. The result is, the student is thoroughly grounded in each lesson as he goes along.

The growth of the schools since their inception in 1891 has been such as to require the erection of special buildings, and the employment of over 3,000 people, fully one half of whom are employed in the home offices at Scranton, Pa., in various capacities, such as officials, text-book writers, instructors, examiners, accountants, printers, binders, etc. The schools occupy two large stone buildings on Wyoming Avenue, used for the corporate offices and accounting department, and another large building which, when fully completed, will cover nearly an entire block, for its instruction department, printing offices, and bindery. The combined floor space of the buildings will be more than seven acres.

In 1901, The Colliery Engineer Company had its charter amended, and its name changed to the International Text-Book Company, and at the same time a charter was obtained for the International Correspondence Schools. The stock of the latter corporation is owned by the International Text-book Company, which transacts all the business in connection with printing, publishing, enrollment of students, etc. The instruction by correspondence is given by the International Correspondence Schools.

The schools are divided into the following different departments or schools known by the names of the professions or branches taught in them: Advertising, Architecture, Arts and Crafts, Chemistry, Civil Engineering, Civil Service, Commerce, Electrical Engineering, English Branches, Languages, Lettering and Sign Painting, Locomotive Running, Mathematics and Mechanics, Mechanical Engineering, Mines, Navigation, Pedagogy, Sanitary Engineering, Sheet Metal Work, Shop and Foundry Practice, Steam Engineering, Marine Engineering, Structural Engineering, Telephone and Telegraph Engineering, Textiles, Window Trimming and Mercantile Decoration. Each of these schools is in charge of a principal, who has under him assistant principals, and a large force of men and women examiners who have been especially trained for the work. They are employed to ex-

amine and correct the work sent in by students. Most of the departments mentioned, in addition to the full course covering the subject, have several subdivisions or short courses for students who do not desire to take up and complete the entire subject. Up to date, January 1905, there have been 173 courses prepared and successfully taught. The language courses, French, German, Spanish, etc., are taught by use of a phonograph, the records being sent through the mail.

If a student has any trouble in connection with his studies or wishes special information on particular points he writes to the schools, and the desired information is furnished at once. There are no regular school terms. A student may begin at any time and take as long a time as he pleases to finish the course. Each is a class by himself. All the text-books used by the students are included in the price of the course and the schools pay all postage on letters and other material sent to the student.

As the business of the schools increased, the methods attracted the attention of the prominent educators connected with the various colleges and universities, who closely watched the development and progress of the system. As these men became familiar with the value of the courses, the instruction papers bound into what are known as bound volumes, were purchased by many of the leading colleges and universities as books of reference for use in their libraries. Recently some of the most prominent of these institutions have adopted, either in whole or in part, the instruction papers of the International Correspondence Schools for class work.

Since the establishment of the schools in 1891 thousands upon thousands of men have secured through them such an education in the theory involved in their trades as to fit them for much higher positions than they could ever have attained without such education.

The following figures show how the schools have grown since their inception: At the end of the first three months of their existence, 1 Jan. 1892, there were 115 students enrolled; five years later, 1 Jan. 1897, the total enrollment was 16,325; 1 Jan. 1902 the number had increased to 370,254; 1 Jan. 1903 the enrollment was 500,572; on 1 Jan. 1904 the number of students was 620,367, and on 1 Jan. 1905 the number had reached a total of 742,507. It has students in nearly every part of the world, and reaches every place where the mail is carried.

DAVID C. HARRINGTON.