

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index

Title on header taken from:
Le titre de l'en-tête provient:

- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

Additional comments: / Pagination is as follows: [4], 1-2, 1-22, 3-14.
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	12X	16X	20X	24X	28X	32X

Canadian Journal of Fabrics.

A Monthly Journal devoted to
Manufacturing in the Textile
and Kindred Trades.

Index to Vol. XXI.

1904.

Biggar = Samuel, Limited,
Publishers,
Toronto and Montreal.

INDEX

	Page.		Page.		Page.
Acetylene Lighting	188	Carpet Outlook	67	Dry Goods Section, Toronto Board	
North Bay	197	Trade	46	of Trade	30
Akroyd, Frederick, Bathley, Eng.	132	Carpets, Brussels and Wilton, 36	53	Dumping Process in Textiles	21
Alkali, Wool Scouring without,		Carter, E. T.	51	Dutch Borneo, Cotton in	42
(April ad. p.)	4	Cartwright, Dr., Power Loom In-		Dyeing Acid Blacks and Logwood	
Almonte, Textile Trade of	63	ventor	102	in Same Bath	112
Aluminum for Wood, Substitution		Cellulose and Artificial Silk	202	Dyeing and Printing, Importance	
of	138	Centrifugal Dyeing Machine	28	of Water in	97
Anti-Dumping Clause	182, 198	Chemicals and Dyestuffs, Jan.,		Dyeing and Preparation of Wool	
Angora Goats	212	Feb., March, April, May, June,		Silk Fabrics	172
in Queensland	269	July, Aug., Sept., Oct., Nov.,		Dyeing Half Silk	267
Art Association, Canadian Women's	226	and December, (ad. p.)	4	Immedial Black on Mer-	
Artificial Cotton in France	251	Chemicals and Dyestuffs, The Stor-		cerized	92
Silk in Canada	90	age of	158	Dyeing Machine, Centrifugal	28
Asbestos Rock into Fibre	189	Cheviot Suiting Design	111	Machines, Piece	273
The Manufacture of	135	China, Textiles in Yunnan District		of Indian Yellow, F F in	
Spinnag and Weaving	82	of	5	Silk	56
Fibre	259	Cloth Calculations	275	Dyeing of Wool Silk Fabrics	172
Australia, South, Hemp and Cotton		Fibres in	144	Dyeing on Half Wool, Discharge	
from	196	Milling Machines	232	Dyeing, Oiling of Wool and its In-	
Australian Wool Growing	142	Thick and Thin Places in	143	fluence on	171
Market	12	Cocoons That Yield Colored Silk	219	Dyeing, Three-Color System	204
Trade Statistics	191	Coloring Matters, Recent Develop-		Underwear	61
Balbriggan Shirts (June ad p.)	10	ments in	21	Woolen Goods Containing	
Bathley, England, Opinions from	132	Coloring Process, Old-Time Tex-		Silk Effect Threads	19
Belts, Facts Concerning, (June ad.		tile	117	Dyeing Works, Parker's	111
p.)	4	Colorings, Patterns in Compound	174	Dyer, A Chemist	118
Binder Twine, Canadian	56	Colors on Hosiery, Sulphur	173	Dyers and Dyes	99
Companies (Feb.		Companies, New, 10, 29, (Mch. ad.		and Fullers, Epidemic	
ad. p.)	12	p.) 12, 112, (July ad. p.)	262	Among	222
Bird Woolen Mills	131	Competition, Foreign	206	Dyes, Insect (Ad. p.)	4
Bleaching Flax, Hemp and Jute	19	Cordage Works, Brantford	5	Substantive	274
on Hosiery	57	Cornwall, Conditions in	190	Sulphur	231
Peroxide	248	Cotton and Silk Market, War and		Dyestuffs (See Chemicals and Dye-	
Bobbin Manufacturing, Substitution		the	30	stuffs).	
of Aluminum for Wood in	138	Cotton and Hemp for South Aus-		Dyestuffs and Chemicals, Storage	
Bobbins, Fibre	111	tralia	196	of	158
Boll Weevil, Cotton	195	Cotton Boll Weevil	195	Dyestuffs, Behavior of Fibres To-	
Bombay, Technical Education in	175	Company Meetings, (Feb.		wards	150
Brantford Cordage Works	5	ad. p.)	12	Edmonton Woolen Mills	238
Britain, Textile Situation in	26	Cotton Crops, American (Cartoon)		Education in Bombay, Technical ..	175
British and Foreign Cotton Trade ..	85	Cultivation in Paraguay ..	158	Egypt and Soudan, Cotton in	146
Competition in Textiles ..	193	Factories, Japanese Oper-		Elections	236
Silk Association	182	atives	196	Electric Power in British Textile	
Textile Centres (See Tex-		Cotton Fields, New	214	Mills	8
tiles.)		German Colonial	42	Electrically Driven Looms in Ger-	
Exports to Canada	99	Goods, Making Non-In-		many	13
Trade with Can-		flammable	202	Electricity in Textile Mills	240
ada, 30, 120 (July ad. p.)	10	Cotton Growing	23	England, Trade in	233
Textile Mills, Electric		in Fiji	8	Wool Trade of	78
Power in	8	in the Empire	52	English Cotton Spinners and	
British Textiles	31	Imports, Canada's	101	Futures	19
Wool and Textile Markets,		in France, Artificial	251	English Spinning, Weaving and Siz-	
(See markets.)		in Dutch Borneo	42	ing	279
British Woolen Exports	29	in Egypt and Soudan	146	vs. Metric	75
Brockville Hat Works' Failure	122	in West Indies	199	Wool Clip	151
Brussels and Wilton Carpets	36	Manufacturing in Russia ..	160	Epidemic Among German Dyers	
Business Notes	18, 110	in Southern		and Fullers	222
Calendars	5	States	145	Erythroscope, Simple Form of	249
Calico Printing Machine, Web		Cotton Market, Raw	139	Excelsior Woolen Mills	231
Press, taken from (Apl. ad. p.)		Markets	30	Exhibition, Organized by Rev. J. E.	
Canada's Cotton Imports	101	Men, Mr. Tarte, Among the		W. Ditchfield	179
Resources	180	Mills, Canadian	138	Exhibition, Toronto	192
Woolen Mills, Limited,		Overcoats	261	Exports to Canada, British Tex-	
73, 101, 115, 121, 138, 149, 214,		Rise of	111	tile	99
235, 252, 261	263	Spinners and Futures, Eng-		Exports, British Woolen	29
Canadian Binder Twine	56	lish	19	Fabric Items 17, 28, 51, 74, 102, 133,	
Cordage Co.	100	Cotton Textiles, India's	59	184, 210, 216, 238	265
High Commissioner's Re-		Trade, British and Foreign		Fabric, Spider Web	182
ports	212	of Japan	266	Fabrics, Finishing Wool and Mixed	
Canadian Manufacturers' Associ-		of Manchuria	231	Fabrics, The Preparation and Dye-	10
ation	227	Crompton-Thayer Fancy Worsted		ing of Wool-Silk	172
Canadian Relations with Newfound-		Loom	248	Factories, Temperature in Textile	
land	113	Decreasing Wool	87	Fall River Strike, (Oct., ad. p.) ..	10
Canadian Silk Factory	107	Designer	274	Fat, Recovery of Wool	189
Woolen Industry	92	Designs in Fancy Tweeds	63	Felting Property in Wool	9
Cape Breton, Sheep Breeding in ..	41	Diazotizing and Developing Wool		Fibre, Asbestos	259
Carbonizing	267	Discharge Dyeing on Half-Wool ..	272	Bobbins	111
Carding Machines	232	Dobbies, Fixing	80	Industry of Philippines	146
Cards, New Feed for Woolen	245	Ditchfield, Rev. J. E. W., Exhi-		in Travancore, Experiments	
Caribou, for Yarn, Canadian	231	bition Organized by	179	with Plantain	19
		Dominion Cotton Co.'s Annual			
		Meeting	106		

INDEX

	Page.		Page.	Page.	
Fibre, Murva, from the Straits Settlements	39	Literary Notes, 20, 94, 134, 156, 184, 213	277	Quebec, Wool in	45
Fibre, Origin, Etc., of the Wool..	38	Lighting Acetylene	188	Queensland, Angora in	269
" Process of Converting Asbestos Rock into	189	Linen, Decline of	128	Quillai and its Uses	143
Fibre, Reindeer, Hair as	107	Long, W. D.	215	Rags, Treatment for Re-Manufacture	65
Fibres in Cloth	144	Loom, A New German, (Jan. ad. page)	12	Ramie	177
" Towards Dyestuffs, Behavior of	150	Loom, Crompton-Thayer	248	" Manufacturing	109
Fiji, Cotton-Growing in	8	" Fixing Points	6	" for Knitting Purposes	142
Finishing Wool and Mixed Fabrics	10	" Invention of Power	56	Reciprocity Agitation	211
" Woolen Goods	21	" Inventor, Dr. Cartwright ..	102	Reel, New Warping	12
Fire, The Great Toronto ..91, 94	125	" New Narrow Goods	191	Reindeer Hair	147
Flax Growing in Manitoba	22	" Setting of the	268	" as Fibre	107
" Hemp and Jute Bleaching...	19	" The Mystery of	263	Rosamond, Bennett, and Preferential Trade	193
" Industry in Canada, 96, 126, 163	164	Looms in Germany, Electrically Driven	13	Roving, Even and Uneven in Woolen Spinning	207
Flax, Manufacture of	195	Manchuria Cotton Trade	231	Russian Flax Supply	68
" Outlook, (Apl. ad. p.)	11	Manufacturers' Association on the Tariff	148	Russo-Japanese War	25
" Supply of Russia	68	Manitoba, Flax-Growing in	22	Russia, Cotton Manufacturing in..	160
Foreign Cotton Trade	85	Market, Australian Wool	12	Scab in South Africa	282
" Textile Centres, (See Textile Centres.)		Markets, British Wool and Textile, 13, (Feb. ad. p.) 4, (March ad. p.) 4, 88, 103, 136, 139, 181, 185, 201, 234, 244	279	Scott, Arthur A., Interview with	237
France, Artificial Cotton in	251	Markets 5, (Feb. ad. p. 6), Mar. ad. p. 6), (Apl. ad. p. 11), 95, 136, 157, 185, 208, 258	278	Scouring Woolen Goods, Hints on	22
Frazil Ice, Remedy for	270	Marsden, Rev. Samuel	167	Selvages	117
Futures, English Cotton Spinners and	19	Mercerization, Wool	59	Shafting in Textile Mills, Speed of	57
German Colonial Cotton	42	Mercerized, Immedial Black M....	92	Sheep Breeding in Cape Breton....	41
" Loom, a New (Jan. ad. p.)	12	" Worsteds	223	" Notes, (Apl. ad. p.)	12
German Progress in Textiles	251	Metric, English vs.	75	" Plucking (Apl. ad. p.)	12
" Surtax	264	" System 43, 46, 47, 69, 104	262	Shirts, Balbriggan (June ad. p.)..	10
" " in Textiles	1	Mildew in Wool Goods, Origin of..	62	Shuttle Check	249
" " New Ruling of..	18	Mill Hands in New England	242	Silk, Artificial, and Cellulose	202
" Textile Manufactures	67	" Life in India	244	" Association, British	67
Germany, Electrically Driven Looms in	13	Milling, Fast Shades of Woolen Yarn	86	" and Cotton Market, War and the	30
Germany, Textile Schools in	76	Milling Machines, Cloth	232	Silk, Cocoons that Yield Colored..	219
Gloves, Money in	101	Mills, Among the, 16, 27, 49, 73, (Apl. ad. p.) 11, 93, 130, 153, 178, 209, 217, 239	264	" Dyeing of Indian Yellow F F on	56
Griffin, Dr.	277	Mills, United States and Canadian	155	Silk, Dyeing, Half-	267
Hat Works' Failure at Brockville	122	Mohair Manufacturers	177	" Factory, A New Canadian... ..	107
Hemp and Cotton from South Australia	196	Mules, Nosing Motion for	180	" in Canada, Artificial	90
Hemp, Jute and Flax Bleaching... ..	19	Murva Fibre from the Straits Settlements	39	" Industry of United States....	260
" Manufacturing in Japan ..	158	National Association of Wool Growers and Manufacturers	139	" " Abroad	170
Hodgson, Jonathan, and Woolen Tariff	217	Newfoundland and Canada	113	" " in France	268
Holden, E., Views on Preferential Trade	213	Nosing Motion for Mules	180	" Weavers at Macclesfield....	67
Hosiery, Fast Bleaching on	57	Nova Scotia, Woolen Manufacturing in	42	Sizing and Weaving, English	279
" in Chemnitz	241	Oil Test, A Comparative	141	South Africa as a Textile Market.	83
" Sulphur Colors on	173	Oiling of Wool, and Its Influence on Dyeing	171	" " Prospect for Textiles in	160
Hyraldite W.	230	Ontario, Wool in	45	South Africa, Scab in	282
Immedial Black or Mercerized	92	Overcoats, Cotton	111	" African Wool	237
Imperial Postal Policy	24	Overlock Machine, Uses of	205	Spider Web Fabric	182
Imports, Canada's Cotton	101	Paraguay, Cotton Cultivation in... ..	158	Spinners and Futures, English Cotton	19
India, Mill Life in	244	Parker's Dye Works	111	Spinning and Weaving Asbestos..	82
India's Cotton Textiles	59	Patents, Textile	14	" Even and Uneven Roving in Woolen	207
Indigo, Present Position of	269	Patterns in Compound Colorings..	174	Spinning, Weaving, Etc., English.	279
Inflammable, Non-, Making Cotton Goods	262	Persia, Boy Weavers of	111	Steam Trap, by Thomas H. Smith.	272
Inflammability of Wool	179	Personal, 18, 50, (Apl. ad. p.) 6, 95, 134, 157, 180, 193	239	Stockings with Pockets	107
Insect Dyes (ad. p.)	4	Peroxide Bleaching	248	Storing Wool	79
International Trade	1	Philippines, Fibre Industry of....	146	Straits Settlements, Murva Fibre from the	39
" Wool Trade	246	Plantain Fibre in Travancore, Experiments with	19	Stroboscope, Use of the	270
Irish Domestic Industries	88	Platt Bros. at St. Louis Fair	244	Sully & Co., D. J., Failure	68
Japan Cotton Trade	266	Plucking Sheep, (Apl. ad. p.)....	12	Sulphur Colors on Hosiery	173
" Hemp Manufacturing in ..	158	Poetry	58	" Dyes	231
Japanese Girl Operatives	196	Postal Policy, Imperial	24	Surtax in Textiles, German	264
Jute, Flax and Hemp Manufacturing	19	Printing, Importance of Water in	97	" The New Ruling of the German	18
Kapok and Its Uses	200	Prizes for Improvements in Textiles	240	Tariff Changes in Woolens	114
Knitting Machine, Rib	223	Pulley, Improved Tension	72	" " in Textiles	123
" Mill Equipment	140			" Manufacturers' Association on the	148
" Mills, United States and Canadian	155			Tariff Modifications	152
Knitting, Ramie for	142			" Preferential	228
Leggatt, A. F.	197			" Woolen	137
				" Yorkshire Wool Trade and the	101
				Tarte, J. Israel, Among the Cotton Men	84
				Tata, Jamsetjee Nusserwanji	170

INDEX

	Page.		Page.
Technical Education in Bombay ..	175	Victoria Jubilee Technical Institute	190
" Training, by Dr. Carroll		War and the Silk and Cotton Mar-	
Wright	154	ket	30
Temperature in Textile Factories	116	War, Russo-Japanese	25
" in Worsted Mills	201	Warp Twisting Machines	182
Tension, Improved Pulley	72	Warping Reel, New	12
Textile Centres, Foreign	14, 48,	Water, Its Importance in Dyeing	
71, 99, 132, 155, 208, 228, 257		and Printing	97
Textile Coloring Processes	117	Waterproofing Composition	180
" Design	63, 111, 145, 174	Weavers of Persia	111
" Exports to Canada, British	99	Weaving, English	279
" Factories, Temperature in.	116	" and Spinning Asbestos.	82
Textile Industries, Prizes for Im-		" Hints on	119
provements in	240	" Improvements of Last	
Textile Manufacturers, German ..	67	Year	59
" Manufacturing in Europe		Weaving, Practical Details of	243
and Canada	109	Web Press taken from Calico	
Textile Markets, British Wool and		Printing Machine (Apl. ad. p.)	6
(See markets.)		Westinghouse Turbines in a Tex-	
Textile Market, South Africa as a	83	tile Mill	30
" Mill, Westinghouse Tur-		West Indies, Cotton in	199
bine in a	30	Wilcox & Gibbs "Overlock" Ma-	
Textile Mills, Diseases Among		chine	205
Workers in	261	Wilton and Brussels Carpets	36
Textile Mills, Electric Power in		" Decay of	120
British	8	Winding, Mechanism of	220
Textile Mills, Electricity in	270	Winnipeg	199
" Speed of Shafting in	57	Wool and Mixed Fabrics, Finishing	
" Patents	14	" and Textile Markets, British	
" Schools in Germany	76	(See markets.)	
" Situation in Great Britain.	26	Wool Clip, English	151
" Tariff Changes	123	" Degreasing	87
" Trade of Almonte	163	" Diazotizing and Developing.	224
" " with Canada, British		" Fat, Recovery of	189
30 (July ad. p.)	10	" The Felting Property in	9
Textiles and Preferential Tariff ..	228	" Fibre	38
" British	31	" Growers, National Associ-	
" " Competition in	193	ation of	139
" " Dumping Process in	21	Wool Manufacturers, National As-	
" " German Progress in	154	sociation of	212
" " Heavy Woolen	3	Wool Growing, Australian	142
" " in the Yunnan District of		" in Ontario and Quebec	45
" China	5	" Inflammability of	179
" " in South Africa, Prospect		" Manufacturer, Small	84
for	160	" Markets (See markets)	5
" " German Surtax in	1	Wool Market, Australian	12
" " India's Cotton	59	" Mercerization	59
" " Metric System in	69	" Oiling of and Influence on	
Topmaking	195	Dyeing	15
Toronto Exhibition	192	Wool Production, The World's	58
" Board of Trade, Dry Goods		" Supply, The World's	2
Section	30	" Sales (Feb. ad. p.)	6
Trade, Foreign Competition in	206	" Scouring without Alkali,	
" in England	233	(Apl. ad. p.)	4
" Intercolonial	1	" South African	237
" Enquiries	12	" Storing	79
" Preferential	193	" Trade	218
" " Views of J.		" " and the Tariff, York-	
Holden	213	shire	104
" " The Carpet	46	Wool Trade, Statistics of Aus-	
" " with Canada, British	30	tralian	191
Travancore, Experiments with		Wool Trade, History of	167
Plantain Fibre in	19	" " West of England	78
Turbines in a Textile Mill, Westing-		" " The Felting Property in	9
house	30	Woolen Cheviot Suiting Design ..	111
Twist and Yarns	194	" Cards, New Feed for	245
Underwear, Dyeing	61	" Duties	190
" for Great Britain	265	" Exports, British	29
United States Hosiery in Chemnitz	241	" Goods Dyeing	19
" " Silk Industry	260	" " Finishing	21
" " Textiles in Canada			
(Oct. ad. p.)	10		
		Woolen Goods, Hints on Scouring	22
		" Industry	39
		" " Ruin of the Cana-	
		dian	92
		Woolen Industry in Canada (Nov.	
		ad. p.)	4
		Woolen Manufacturing in Nova	
		Scotia	42
		Woolen Manufacturers' Deputation	67
		" Mills, Edmonton	238
		" " Excelsior	231
		" " Equipment of Cana-	
		dian	187
		Woolen Mills, United States and	
		Canadian	155
		Woolen Mills, The Bird	131
		" Situation	89
		" " Graphically Stated	95
		" " Spinning, Even and Un-	
		even Roving in	207
		" Tariff	137
		" " Changes	114
		" " Jonathan Hodgson	
		and	217
		Woolen Textiles, Heavy	3
		" Yarns, Milling Fast	
		Shades of	86
		Wools, Oiled	41
		" Something About	55
		Worsted Industry	184
		Woolens, Canadian	219
		Worsted Mills, Temperature in	201
		Worsted, Mercerized	223
		Wright, Dr. Carroll, on Technical	
		Training	154
		Yarn, Canadian Caribou for	231
		Yarns and Twist, Data Relating to	194
		" Spinning Worsted	84
		" " Determining Size of (Feb.	
		ad. p.)	4
		Yarns, Milling Fast Shades of	86
		Yorkshire Wool Trade and the	
		Tariff	104

CORRESPONDENCE AND CONTRIBUTED ARTICLES.

Ainley, Albert, "The Crompton-Thayer Fancy Worsted Loom"	248
Dale, Samuel S., "English vs. Metric"	75
Dale, Samuel S., "Our Weights and Measures"	104
Halsey, F. A., "The Metric System"	47
Johnson, Ed., "The Metric System"	43
" " "Metric Measures" ..	262
Lodian, L., "Canadian Caribou for Yarn"	231
Millichamp, R., "The Case of the Canada Woolen Mills"	149
Our Own Correspondent, "Winnipeg"	199
Our Bradford Correspondent, "British Wool and Textile Markets," 13. (Feb. ad. p. 4), (March ad. p. 4), 88, 103, 136, 139, 185, 201, 234, 244	279
Reidel, M., "The Worsted Industry; A Bit of History"	184

CANADIAN JOURNAL OF FABRICS

THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XXI.

TORONTO AND MONTREAL, JANUARY, 1904.

No. 1.

WILSON, PATERSON & Co.

30 St. John Street, Montreal,

REPRESENTING IN CANADA

The United Alkali Company of England,



OFFER TO THE TRADE—

Caustic Soda, 50° to 78°, Caustic Potash, Salt Cake, Sal soda, Soda Ash (Ammonia and Leblanc processes)—Chlorate of Soda, Chlorate of Potash, Hyposulphite of Soda (Curlew Brand), Chloride of Calcium, Dichromate of Soda, Dichromate of Potash, etc., etc.

McARTHUR, CORNEILLE & Co.

Importers and
Manufacturers of



OILS CHEMICALS

and DYE

310 to 316 St. Paul St.

MONTREAL STUFFS

ANILINES ALIZARINES

DOMINION DYEWOOD & CHEMICAL CO.

TORONTO

Direct Importers. Sole Agents in Canada for

Messrs. The FARBENFABRIKEN Vormals FRIEDR. BAYER & CO., Elberfeld, Germany.

WATSON JACK & COMPANY, MONTREAL.

ANILINES and DYESTUFFS.

Chrome Acid Colors. Excellent on Yarn or Pieces

Send for dyed Samples illustrating their
great utility.

New York and Boston Dyewood Co.

MANUFACTURERS OF

DYEWOOD Extracts

Importers of INDIGO AND ANILINE COLORS.

SELLING AGENT IN CANADA:

A. W. LEITCH, 16 Hughson St. South, Hamilton, Ont.

CASSELLA COLOR COMPANY.

(American Branch of
Leopold Cassella & Co.)

Artificial Dye Stuffs

NEW YORK, 182-184 Front Street.

BOSTON, Room 24, 68 Essex Street.

PHILADELPHIA, 126-128 South Front Street.

PROVIDENCE, 64 Exchange Place.

ATLANTA, 47 North Pryor Street.

MONTREAL, 86-88 Youville Square.

W. T. BENSON & CO.

ANILINE COLOURS

DYEWOOD EXTRACTS

CHEMICALS, &c., &c.

Specialties:

Logwood for Cotton and Wool.

Fast Onedip Cotton Dyes.

Alizarines & Azo-Alizarines.

164 St. James St., Montreal

BELLHOUSE, DILLON & COMPANY

SOLE AGENTS IN CANADA FOR

KUTTROFF PICKHARDT & CO.,

NEW YORK.

Anilines, Alizarines, Indigo, etc.,

For Cotton, Silk and Wool.

Toronto Office—20 Wallington Street East.

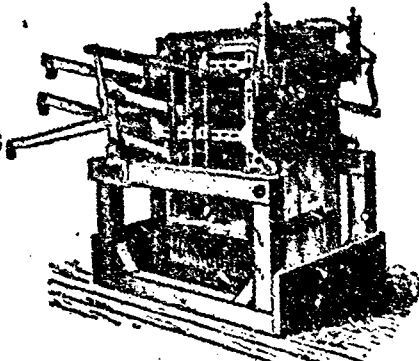
Coristine Building, - - - - Montreal.

New York Office, - - - - 20 Cedar Street.

USE THE
"Halton"
Jacquard

BEST MACHINE ON THE MARKET

Single Lifts
 Double Lifts
 Rise and Falls
 Double Cylinders
 Cross Borders
 Brussels



"1304" Fine Index
 Double Lift.

The only
 Reliable
 Fine
 Index
 Machine.

Thomas Halton's Sons

Alleghany Avenue and C. Street, - PHILADELPHIA

New York Boston Philadelphia Providence Chicago Montreal

C. BISCHOFF & CO.

IMPORTERS OF

Aniline Colors and Alizarines

Dye-Stuffs and Chemicals

Main Office, 88 Park Place, - - New York.
 Canadian Branch, 416 St. Paul St., Montreal.

YARNS

W. M. CROWE, Sole Agent For Canada.
 230 Wellington St. W.
TORONTO

Specially representing:-

- Messrs. John Smith & Sons, Ltd., Bradford, Eng., Worsted Yarns.
- Messrs. Wm. Hollies & Co., Ltd., Nottingham, Eng., Worsted and Merino Yarns.
- Mr. J. C. Horsfall, Cross Hills, Eng., Knitting Yarns.
- Mr. J. H. Wiley, Bradford, Eng., Fancy Loops and other effect Yarns in Worsted and Mohair.
- Messrs. Ashroft & Grandage, Ltd., of the Bradford Dyers' Association, Mercerized Cotton Yarns.

Knitting Manufacturers will find great satisfaction in using

HORSFALL'S BLENDING HAYFIELD KNITTING YARNS
 FOR SWEATERS AND ROSIERY.

GARLAND MFG. CO.,

SACO, MAINE.

(Formerly Loom Picker Co., Biddeford, Maine).
 H. F. GARLAND, TREASURER.

MANUFACTURERS OF

- Rawhide and Leather Loom Pickers,
- Loom Harnesses and Roads,
- Duck and Ticking Lug Straps,
- Tape Picker Loops, Leather Strapping,
- Black Oak-Tanned English Picker Leather,
- North Carolina Hickory Picker Sticks.

Illustrated Catalogue sent on application.

PEROXIDE OF SODIUM BLEACHES

"White Without Weakening"

THE ROESSLER & HASSLACHER, CHEMICAL CO. 100 WILLIAM ST. NEW YORK.

ROBERT S. FRASER

Wools, Peruvian Cottons, Noils, Tops, Yarns, Etc.

Tetlow's Card Clothing.
 (Stock in Montreal).

Manufacturers of Wastes and Shoddies.

18 Lemoine Street, - - - MONTREAL.

**Mechanical Draft Apparatus,
 Heaters and Fans,
 Blowers and Exhausters.**

Drying Apparatus for all Textile Materials.
 Heating and Ventilating for Mills and Factories.

For Catalogues and Prices write-

SHELDON & SHELDON,
 GALT, Ontario, Canada.
 Formerly McEachren Heating & Ventilating Co.



CANADIAN JOURNAL OF Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

3-192

Vol. XXI.

TORONTO AND MONTREAL, JANUARY, 1904.

No. 1.

Canadian Journal of Fabrics

A Monthly Journal devoted to Textile manufactures and the Dry Goods and kindred trades.

Subscription: Canada, United States and Great Britain, \$1.00 per year Foreign, 5/6. Advertising rates on application.

Office: 18 Court St., cor. Church, Toronto, and the Fraser Building, Montreal
BIGGAR-SAMUEL, LIMITED, Publishers

TRAVELLING REPRESENTATIVE: A. W. SMITH.

Toronto Telephone, Main 4310 | Montreal Telephone, Main 2579

Business correspondence should be addressed to Montreal; but cuts, news items and editorial correspondence to Toronto; cuts from abroad should be sent by post wherever possible, not by express. Changes of advertisements should be in our hands not later than the 10th of each month to ensure insertion.

THE CANADIAN TEXTILE DIRECTORY

A Handbook of all the Cotton, Woolen and other Textile manufactures of Canada, with lists of manufacturers' agents and the wholesale and retail dry goods and kindred trades of the Dominion; to which is appended a vast amount of valuable statistics relating to these trades. Fourth edition. Price, \$3.00.

BIGGAR-SAMUEL, LIMITED, Publishers.

CONTENTS OF THIS NUMBER.

Australian Wool Market	12	Foreign Textile Centres	14
British Wool and Textile Markets ..	13	German Surtax in Textiles, The	1
Business Notes	18	Intercolonial Trade	1
Calendars Received	5	Literary Note	20
Coloring Matters, Recent Develop-	5	Loom-Fixing Joints	6
ments in	21	Mills, Among the	16
Cardage Works, Brantford	5	Oiling of Wool and its Influence on	
Corporations, New	10	Dyeing	15
Cotton Growing in Fiji	8	Plantain Fibre in Travancore, Expe-	
Dumping Process in Textiles, The ..	21	riments with	19
Dyeing Woolen Goods containing		Patents, Textile	14
Silk Effects	19	Personal	18
Electricity in British Textile Mills ..	8	Scouring Woolen Goods, Hints on ..	22
Electrically Driven Looms in Ger-		Sulphur Colors on Hosiery	11
many	13	Textiles in Yunnan District of China	4
English Cotton Spinners and		Trade Enquiries	12
"Futures"	19	Warping Reel, New	12
Fabric Items	17	Wool Markets	5
Felting Property in Wool	9	Wool Supply, The World	21
Finishing Wool and Mixed Fabrics ..	10	Woolen Goods, Finishing	21
Flax Growing in Manitoba	22	Woolen Textiles, Heavy	3
Flax, Hemp and Jute Bleaching	19		

THE GERMAN SURTAX IN TEXTILES.

The surtax imposed by the Dominion Government on German goods, in retaliation for the discriminating duties imposed on Canadian products by Germany, has already resulted in the reduction of Germany's aggregate exports to this country by about 25 per cent., and this reduction would be still greater if British manufacturers were not so stubbornly conservative in their methods. Some lines of German goods—such, for instance, as Portland cement—are being simply wiped out by the surtax; but many lines are not so far greatly affected, simply because the adaptive German has taken pains to supply some special Canadian want, while the British

manufacturer, in too many cases, has let the trade go by through his traditional policy of "If-you-wor't-take-them-as-we-make-them-you-may-go-somewhere-else." It is a fact, at all events, that while Germany is holding some lines of textiles here, only by making concessions in price to the Canadian importer, and while she is losing other lines, it is not English manufacturers but the French and Austrians who are stepping into the places of the Germans in a number of instances. The lines mostly being lost to the Germans are rugs, curtains, dress goods, and certain specialties in hosiery and fancy dry goods. French makers of dress goods, fine worsteds, velvets, etc., are gaining at Germany's expense; but in trimmings, hosiery and gloves, the Germans are still generally speaking, holding the trade, though not always without a sacrifice in price.

In the matter of dyestuffs and chemicals, used in the textile trades, the German imports are unaffected as most of those goods are on the free list when imported by manufacturers. It is worth calling to mind again that though aniline dyes were the discovery of an English chemist and were first put to use on a commercial scale in Great Britain, yet the German, by virtue of his scientific skill and his admirable patience and perseverance, has so developed this department that he now controls the dyestuff and chemical trade of the world. The synthetic production of indigo, which has already developed to an extent which threatens to rival if not displace the culture of the natural product in India, is in itself a marvel of German skill, and it may with truth be said that if Canadian manufacturers and technical men developed the great qualities of Germans in those spheres, the effect of the surtax would be to transfer trade into Canadian hands and not into those of some other European country. Technical education carried on by a patient, intelligent and industrious people has placed Germany where she is in manufacturing. She may blunder in state craft, but she makes no mistakes in applied science.

INTERCOLONIAL TRADE.

Attention has been called in recent issues to the possibilities of Canadian trade with South Africa, under the new preferential tariff of those colonies in the advantages of which Canada now shares; and while the manufacturers of Canadian woollens and cotton piece goods, carpets and knit goods cannot expect to benefit to the same extent as some

other industries, there are still some manufacturers whose specialties can find an entrance. In addition to these, some Canadian manufacturers of clothing, men's furnishings and ladies' wear can do a trade in South Africa, and as a matter of fact, a few enterprising Canadian firms in these lines were actually doing a small trade there before the new South African tariff went into force. Trade is temporarily depressed in the new colonies as well as the Cape and Natal, owing to the scarcity of native labor, and the prolonged drought, but these conditions will pass away, and those who study that market in the meantime will be placed in greater advantage when trade revives.

Meantime another new market is opened up as it has never been opened before to Canadian merchants and manufacturers, namely, New Zealand, a colony which, like its great neighbor island now confederated into the Commonwealth of Australia, has a splendid future. The secretary of the Canadian Manufacturers' Association has prepared a list of items that would be favorably affected in the case of Canada showing the rate of duty under the New Zealand general tariff, and the lower preferential rate under which Canadian goods would go into that colony. As will be seen, a number of items thus favorably affected are in the textile and kindred trades and since our United States neighbors already do an increasing trade in that quarter of the world, this new opening for Canadians under the preferential tariff should not be neglected. So quick are the United States manufacturers at seeing the advantages Canada will enjoy under this new tariff that a number of exporters of New York and other cities in the Republic have opened up correspondence with Canadian houses making lines of goods similar to those hitherto exported to New Zealand from the United States. The alert New Yorkers are willing to handle Canadian goods if those of their own country are knocked out of the market. The following is the list referred to:

NEW ZEALAND PREFERENTIAL TARIFF.
First Schedule.

	Prof. Tariff, Bbl.	Gen. Tariff, Bbl.
Cement	2s.	4s.
Second Schedule.		
	P.C.	P.C.
Basket and wickerware, n.o.c., not being furniture	20	30
Bicycles, tricycles, and the like vehicles, also finished or partly finished or machined parts of same, n.o.c., including weldless steel tubing cut to short lengths	20	30
Boots, shoes, and slippers, n.o.c, goloshes, clogs, pattens, vamps, uppers and laces..	22½	33¾
Candles per lb.	1d.	1½d.
Carriages, carts, drays, wagons and perambulators, and wheels for same	20	30
China, porcelain and parianware	20	30
Clocks	20	30
Cordage and ropes, n.o.c.	20	30
Cream of tartar, per lb.	1d.	1½d.
Earthenware, stoneware and brownware	20	30
Fancy goods and toys	20	30

Firearms—all kinds	15	22½
Fish, potted and preserved, per lb.....	2d.	3d.
Furniture and cabinetware, n.o.c., and other than iron	25	37½
Glass, crown, sheet and common window, per 100 ft. superficial	2s.	3s.
Glassware; also plate glass, and glass polished, colored and other kinds, n.o.c., globes and chimneys for lamps	20	30
Hardware, ironmongery and holloware	20	30
Hops, per lb.	6d.	9d.
Iron nails, per cwt.	2s.	3s.
Iron pipes and fittings for same, including main cocks	5	7½
Lamps, lanterns and lamp wick	15	22½
Musical instruments, viz., pianos	20	30
Paperhangings	15	22½
Paper, wrapping, other kinds, including brown, cartridge and sugar papers, per cwt.	5s.	7s. 6d.
Plate and plated ware	20	30
Pumps and other apparatus for raising water	20	30

Third Schedule.

- Bicycles and tricycles, fittings for—viz., rubber tires, pneumatic tires, outside covers, and inner tubes; rubber and cork handles, and pedal rubbers; also drop forgings and stampings, ball-bearings, weldless steel tube in full lengths, rims, forks, and spokes in the rough.
- Gas engines and hammers and oil engines.
- Gumboots.
- Iron and steel cordage.
- Iron, plain black sheet, rod, bolt, bar and plate.
- Printing paper.
- Rails for railways, and tramways.
- Sailcloth, canvas and unbleached double-warped duck.
- Surgical and dental instruments and appliances.

Free, 20 p.c.

THE WORLD'S WOOL SUPPLY.

The National Association of Wool Manufacturers of the United States have issued a report by W. J. Battison, on the domestic wool clip of 1903, which contains much information of interest to wool manufacturers in the Dominion. Dealing with the home wool product, the report states that the total production for the year equals 287,450,000 pounds of wool, equivalent to 124,366,205 pounds of scoured wool, or 13,546,680 pounds less than the estimated production of clean wool in 1902. The average value per scoured pound on Oct. 1st last was 48.8 cents for fleece wool, and 43.4 cents for pulled wool, as against 45.2 cents, and 39.7 cents, respectively, for 1902. Referring to the shortage in the supply for 1903, this is apparently due to the decrease in the number of sheep in all sections of the country, and the prospects are that there will be a still further reduction in years to come.

Free pasturage in many States is a thing of the past, and ranges are becoming more restricted and crowded. The conflict between the cattle-men and sheep-raisers is growing

more intense, the former claiming that they cannot pasture cattle where sheep have been. The reservation of forest lands is also working to the disadvantage of the sheep-man, as he is only allowed to send a limited number of sheep into the restricted territory, because, being close feeders, they eat the young shoots and prevent forest growth. It would, therefore, appear to be necessary to find new ranges if sheep raising in large flocks is to continue, and it is worthy of note that Prof. Thos. Shaw, writing to the "American Sheep Breeder," claims to have discovered an ideal country where sheep may run the whole year with but little care. The country he suggests lies west of the Cascade Mountains, and runs from California, on the south, to Alaska, on the north. We know that in the British Columbia section of this belt the climate is favorable to sheep, the only drawback being the lack of a local market for wool.

There is a widespread conviction in the United States that the day of extremely large flocks on unlimited ranges is passing away, and that sheep will have to be kept in smaller flocks and those adapted to closer confinement substituted for other breeds. As an illustration of how successfully sheep can be raised in small flocks, it may be mentioned that Great Britain, with a territory but little larger than New England, New York and New Jersey, supports three-fourths as many sheep as are in the United States.

Dealing with the world's wool supply, it is noticeable that the shortage amounts to 29,000,000 pounds in the United States, 50,000,000 pounds in Australasia, and 30,000,000 pounds in South America, in addition to which the shipments from other countries have been reduced with no prospect of an increase in the near future. In 1894 there were in Australia and Tasmania 100,605,415, and in New Zealand 19,826,604 sheep, making a total of 120,432,019. Since that year there has been a steady diminution in the numbers, 1901 excepted, until in 1902 there only remained a total of 73,985,654. These losses are the consequence of the series of droughts which have prevailed for years, and under the most favorable circumstances it will be some years before Australasia can build up her flocks to the former standard.

In Argentina, the demand for mutton is so great that the freezing establishments are increasing their plants, so that mutton sheep will continue as of recent years to form a large majority of the flocks. As in Australasia, there has been a gradual decrease since 1895 in the production of South American wool, 1897 excepted, the production for 1901-02 being 521,000 bales, as compared with 597,000 in 1895. The future of the wool supply is one demanding the most careful thought of all who are interested in textile manufactures. A corner cannot be made in wool, as in cotton, for the British Empire controls the bulk of the supply, and although prices will be materially affected by continued shortages, the colonies would no doubt receive a preference should it be necessary to limit the exports to other countries. Nevertheless with Canada's natural resources for farming of all kinds, it should be possible to raise wool in such quantities as would enable her to supply not only her own mills, but to export large quantities at very remunerative prices.

In Western Canada, there are over 300,000 square miles of land available for free grazing, where cattle, horses and sheep are able to range out all winter in the snow-covered prairies and yet keep in good thrifty condition. This is due to the fact that the prairie grasses suspend growth early in the autumn, and are subjected to a regular process of sun curing on the stalk, the cattle, as in the case of their predecessors, the buffalo, being able to subsist all winter upon the cured grasses. The total area of New South Wales, Australia, is about equal to that of Western Canada. There are in the latter 200,000 head of sheep, while up to a few years ago, New South Wales boasted of sixty million head in addition to cattle and horses in great numbers. This conveys an idea of the expansion which this industry is capable of in our own country.

* * *

—Cotton will figure largely at the Louisiana Purchase World's Fair, to be held this year at St. Louis. Mississippi will have a unique exhibit in an immense statue to be called "King Cotton," made entirely of raw cotton. Louisiana will have a field of growing cotton plants, and there will be a gin, press and cotton seed press in operation.

* * *

The Ryan & Goodland Co. has taken over the mill of Ryan & Goodland, St. Boniface, Man., at a valuation of \$20,000. John Ryan is president; H. T. Goodland, managing director, and A. E. Levy, secretary-treasurer. The capital is \$50,000, and the additional stock will be used to extend the business. The company manufactures yarns, tweeds, flannels, blankets and knitted goods. This is the pioneer woolen mill of Manitoba, and the success of the industry will be a matter for gratification.

* * *

HEAVY WOOLEN TEXTILES.

The Heavy Woolen District may rightly claim to produce textiles for almost every part of the globe—from the common well-known "President" cloth, used for ponchos by the Wild West cowboy, up to the finest superfine cloths manufactured for our own West End houses. Since the introduction of shoddy and murgu into most classes of goods, of course, the amount of wool used has somewhat diminished; but, still, a fair quantity is used in this district. Several standard methods of calculation are used. It is the usual custom in the spinning department to spin all yarns to a given length "per ounce;" for example, a yarn known as 60 yards implies that it is 60 yards per ounce. The custom of naming yarns "open band" twist or "cross band" twist is generally followed out, although in odd cases the term "reverse" twist is employed in place of "open band" twist. In the warping department, we again find another method of making deductions. The usual calculation of cotton warps is by a certain number of beers—a beer containing 38 ends. In this district, this same method is also used for woolen warps; but, in respect of the latter, it is the general practice to calculate the total number of ends in the warp. Again, in reference to the weaving department, we find that in place of the very common method of reckoning the sett of a cloth in the loom as a certain number of ends per inch, the computation is on the basis of the number of beers (38 ends) in 90 in.; for example, a cloth made 180 sett implies that there are 180 by 38 threads in 90 inches:

or, in other words, 76 threads per inch. On calculating slays, the "count" is based on the principle of two ends in a reed, or dent; 180 sett slay means that it is 180 by 38 ends (slayed two in a reed) in 90 in. If this were slayed three in a reed, of course it would at once become 270 sett, or, four in a reed, 360 sett.

The following are a few designs, with all particulars suitable for making worsted cloths, with a low mungo back on. All marks on the designs represent warp ends up. Marks in type are face picks, and x type are where the mungo backing pick is introduced.

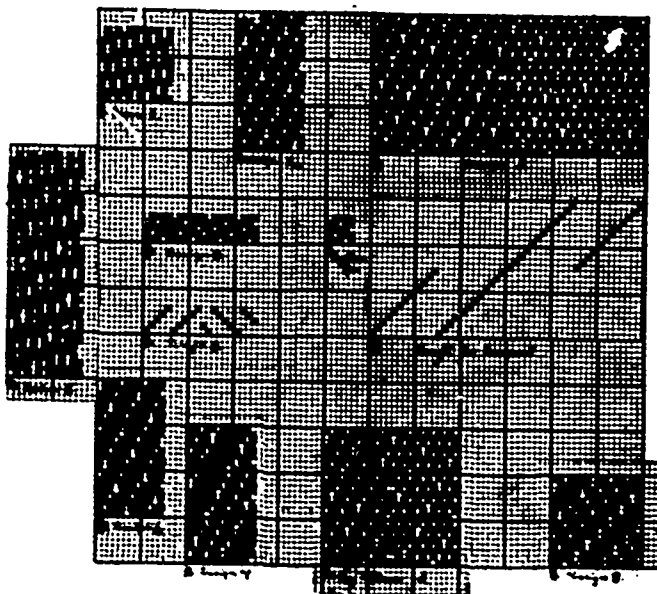
Design 1 is the well-known 13-shaft corkscrew, and is a single-make cloth, i.e., one warp and one weft. The following are suitable particulars:

Warp: All 2/60's white Botany worsted,
 Weft: All 80 yds. oz. open hand low mungo.
 4,274 ends in warp, 170 sett on 13 shafts.
 Straight draft, 80 picks per inch.
 Finished cloth, 54 in. wide, 21/22 ozs. per yard.
 Piece dyed. Clear finish.

Design 2 is for a worsted twill cloth, made to the following particulars:

Warp: All 2/60's white Botany worsted,
 Weft: 2/60's black cotton1 } = 2 picks.
 85 yds. mungo backing1 }
 5,434 ends in warp, 220 sett on 12 shafts.
 Straight draft, 60 picks per inch.
 Finished cloth, 54 in. wide, 22/23 ozs. per yard.
 Piece dyed. Clear finish.

Design 3 is for a worsted stripe cloth. The size of the stripes can be varied either smaller or broader by means of the draft—i.e., for a narrow stripe draw the warp-ends as fol-



lows: In the healds Nos. 1 to 24 straight through, and for a broad stripe Nos. 1 to 12 once or twice, and Nos. 13 to 24 once or twice, according to the width of stripe required. The following are suitable particulars for production:

Warp: All 2/60's white Botany worsted,
 Weft: 2/70's black cotton1 } = 2 picks.
 100 yds. mungo backing1 }
 5,947 ends in warp, 240 sett on 24 shafts.
 Straight draft, if a very narrow stripe wanted.
 Draft No 3 for a medium size of stripe, 96 picks per in.
 Finished cloth, 54 in. wide, 21/22 ozs. per yard.
 Piece dyed. Clear finish.

Design 4 is for a worsted stripe made to the following particulars:

Warp: All 2/60's white Botany worsted,
 Weft: All 70 yds. mungo,
 3,705 ends in warp, 150 sett on 5 shafts.
 Drafted gear, 28 picks per inch.
 Finished cloth, 54 in. wide, 19/20 ozs. per yard.
 Piece dyed. Clear finish.

Design 5 is for a worsted corkscrew cloth, with a weft back on, made to following particulars:

Warp: All 2/52's white Botany worsted,
 Weft: 2/30's black cotton1 } = 3 picks.
 250 yds. mungo backing1 }
 5,130 ends in warp, 200 sett on 13 shafts.
 Straight draft, 120 picks per inch.
 Piece dyed. Clear finish.

Design 6 is for worsted twill made to following particulars:

Warp: All 2/60's white Botany worsted,
 Weft: All 120 yds. mungo,
 5,187 ends in warp, 210 sett on 12 shafts.
 Straight draft, 68 picks per inch.
 Finished cloth, 54 in. wide, 20/21 ozs. per yard.
 Piece dyed. Clear finish.

Design 7 is for a worsted diagonal, made to the following particulars:

Warp: All 2/50's white Botany worsted,
 Weft: 2/40's black cotton1 } = 2 picks.
 64 yds. mungo backing1 }
 4,940 ends in warp, 200 sett on 12 shafts.
 Straight draft, 56 picks per inch.
 Finished cloth, 54 in. wide, 23/24 ozs. per yard.
 Piece dyed. Clear finish.

Design 8 is for a worsted twill cloth, made to the following particulars:

Warp: All 2/50's white Botany worsted,
 Weft: 2/60's black cotton1 } = 2 picks.
 100 yds. mungo backing1 }
 5,400 ends in warp, 220 sett on 10 shafts.
 Straight draft, 76 picks per inch.
 Finished cloth, 54 in. wide, 22 ozs. per yard.
 Piece dyed. Clear finish.

In all above examples, it will be noted that where two wefts are employed, i.e., cotton or face weft, and mungo for backing, the cotton is also given as being black. This is not absolutely essential, but, with a white warp, it enables the weaver to detect any faults of imperfections much easier than if the warp and weft were all one color. Also, the dyeing of these goods in the piece, the cotton weft having already been dyed, it covers far better. These goods require burl-dyeing, to cover the cotton contained in the backing weft, otherwise there would be a grey appearance on the back of the cloth. After scouring, these goods are raised to a certain extent on the back of the piece, which gives them the required handle and cover. In this process considerable care is necessary, as, if the teazles on the raising gig are too hard, and get too far into the piece, it means a considerable waste in flocks, and, at the same time, detracts from the weight of the finished piece. All the cloths described in this article are what are known as single beam cloths, i.e., only one warp is used, that being of worsted, which gives the general appearance of the cloth.—By S. M. in Textile Journal.

BRANTFORD CORDAGE WORKS.

One of the most important of Brantford's manufacturing industries is the Brantford Cordage Works. It is the successor of the old Brantford Cordage Co., started in 1898, but carried on for a time under another name. During the past season new machinery has been put in, doubling the capacity of the factory. It is now working on twine for the season of 1904, and has a capacity of seven tons a day. The buildings comprise a factory and offices of white brick, 195 by 85, one story; brick storehouse for raw material, 160 by 50, and wood storehouse, covered with corrugated iron, for twine, 150 by 40. The twine is put up in exceedingly neat bales of 50 lbs. each, the ten bales being packed in a jute bag, which is securely sewed and lashed with rope made in the factory from the coarser parts of the raw material. Every purchaser of a bale thus gets a bag and 21 feet of good rope. The trade mark of the company is a maple leaf, and they make four brands of twine—Gilt Edge, 650 ft.; Gold Leaf, 600 ft.; Silver Leaf, 550 ft.; and Maple Leaf, 500 ft. They claim to have the best equipped cordage factory in the Dominion, and to turn out only high-grade twine. Manilla from the Philippines and New Zealand, and sisal from Yucatan, are the only raw materials used. The output is consumed principally in Ontario, a little has gone to the Northwest, but the company has been unable to supply any for shipment abroad, though they have received enquiries for it. Already, though their travellers have only been out a short time, as many orders have been booked as during the whole of last season, and the company expects to have 600 accounts this year. Some difficulty has been experienced in securing female help, but this is expected to be overcome after the New Year.

WOOL MARKETS.

London, England.—There is a little movement in the way of firmer prices for most fine grades and a decided improvement in coarse grades from the lowest point recently touched, but the general disposition is to await developments after the year has turned, when it is hoped for better things. A good deal depends now upon the supply likely for the next public sales; if small, then we may see better prices for good wool. The probable figure is put at about 135,000 bales, but it may well fall short of that at the last moment. It now stands:

	Spot Stock for Sales of Jan. 19, 1904.	Total Stock for Sales of Jan. 20, 1903.
	Bales.	Bales.
Sydney	17,000	27,000
Queensland	4,500	10,500
Port Philip	12,000	24,000
Adelaide	8,000	12,400
Tasmanian	500	100
Swan River	5,000	16,000
Cape	8,000	12,000
New Zealand	9,000	38,000
Falklands, Puntas and River Plate..	500	2,000
Total	65,000	142,000
Merino wool	51,000	90,000
Crossbred wool	14,000	52,000

The show of New Zealand crossbred will be much smaller than last year, but a better show of Queensland wool is expected.

Montreal.—There is no material change since our last. There is very little wool held in this market, most of the

domestic having been shipped to the States. Foreign wools are held very firmly, and cable advices recently received indicate a very strong market. The cloth mills here are still slack. The knitting mills continue to have all the work they can do. Prices quoted: Greasy, Cape, 17 to 19½c.; B.A. wool, 30 to 40c.; Ontario washed fleece, 17 to 18c.; and unwashed, 13 to 14c.; Nova Scotia washed fleece, 22 to 23c.; pulled wool, extras, 22 to 23c.; Northwest, 16 to 17c.

Toronto.—Market quiet. No demand. Prices quoted: Fleece, combing, 17c.; fleece, clothing, 19c.; unwashed, coarse, 9c.; unwashed, fine, 10c.; pulled, super, 17 to 19c.; pulled, extras, 19 to 21c.

CALENDARS FOR THIS YEAR.

We have to acknowledge, with thanks, the receipt of very useful calendars from the following firms: Dominion Dyewood and Chemical Co., manufacturers and agents of all kinds of dyestuffs and chemicals, Toronto; Oak Hall Clothing house, Toronto; Morton, Phillips & Co., manufacturing stationers, Montreal; Hale Bros., publishers, The Packet, Orillia, Ont.; Royal Insurance Co., per Thomas Hunter, agent, 117 King street West, Toronto; the B. Greening Wire Co., Hamilton, Ont.; Pittsburg Meter Co., East Pittsburg, Pa.; the Acton Free Press, Acton, Ont., and the Alexander Engraving Co., Toronto.

TEXTILES IN THE YUNNAN DISTRICT OF CHINA.

A report by G. Litton, the acting British Consul at Yunnan-fu, recently issued, contains the following particulars relative to the textile trade of that district: "Raw cotton is imported almost solely for wadding garments and quilts. The imports of Manchester goods are small, the annual value being about \$300,000. There is a chance of extending the foreign piece-goods trade in the Yung Chang and Teng Yuch Valleys, where many people have travelled in Burmah, and have a taste for foreign cloth. The Shasi cloth, which is the principal clothing of the people in the Chao Tong district, is losing ground on account of its price. All other cottons have in the last twelve years rapidly yielded in public favor before 'yang sha pu,' or cloth locally woven from imported yarns. The great centre of this industry is the Hsin Hsing Valley, three days south of Yunnan-fu. This valley and the country near it take some 40,000 piculs yearly, and the manual dexterity of the weavers has attained so high a standard that Hsin Hsing cloth is distributed all over the province, especially in the Ta Li district; the reason for the establishment of this industry at Hsin Hsing is that the population is dense and is near a foreign custom-house, so that goods can be brought in cheaply under transit pass from Mengtse, where they enter by the Red River route from the French province of Tonquin.

"Yunnan-fu takes about 15,000, and Chu Tsing, in East Yunnan, about 12,000 piculs of yarn annually, which are consumed locally. Attempts are now being made to start weaving all over West Yunnan, notably at Yung Chang and Hoehing Chou, and yarns can now go from Teng Yuch into Southwest Szechuan and return thence to Yung Peh in the form of woven cloth. A weaving industry is now springing up in Hoehing Valley, yarn being brought under transit pass from Teng Yuch."

Among the articles of import likely to have an extended market in West Yunnan, the acting Consul mentions, blanket, cheap ribbons and laces, umbrellas, the stouter cottons, such as American drills, cotton prints of a gaudy pattern, and turkey reds.

LOOM FIXING POINTS.

I wish to present to the readers of your paper the fixing points about a loom in a clear and concise form, so that they can be easily referred to. I do this with the hope that it will help all who read the discussion page, and especially those who are just beginning and understand something about the fixing of looms. First, I will give the effect, then a few words as to the cause, keeping right to the point as far as possible.

Loom Slamming or Banging Off This is what a fixer is called to a loom for in quite a number of cases. There are quite a number of causes for this which will be enumerated.

Change of Atmosphere—If there has been a sudden change from dry to damp weather, the boxes and shuttles will become sticky. The shuttle will not fit right in the box, the result will be the loom will bang off. To remedy this, take waste and wipe shuttles and boxes thoroughly dry. If this does not remedy take a piece of fine sand paper and rub the shuttle. It is advisable to rub both shuttles the same so as to keep both the same width and weight. A very small drop of oil put on the swell with the finger after cleaning with waste will often remedy. When there is this sudden change of atmospheric conditions, it is not advisable to use a wrench in any way if it can possibly be avoided, for if the mill is equipped with humidifiers or a good heating system, the conditions will soon equalize themselves in the mill, and if wrenches have been used and loom changed over the result will be that this work will have been for naught.

Rebounding Shuttle.—First, caused by pick being too strong. Second, loose box. Third, finger on protector rod having slipped.

These can be remedied, as follows: First, it will readily be seen from which side the pick is too strong. The shuttle often stops on that side of the loom with strong pick. The reason for this is that the shuttle having rebounded in opposite box on the next pick a weak pick is made and the shuttle will not get in the box and loom bangs. Take off some of the power from that side by raising the picking arm or stirrup straps. Second, if the box is loose, the swell or guide will have to be tightened to hold shuttle firm in box. Third, if the finger on protector rod has slipped, put back in right place and tighten securely. In fixing the finger in its right position, care must be taken that the dagger clears the receiver; also when dagger strikes receiver, the dagger will strike full in the slot in receiver. Setting the dagger will be mentioned later.

Cracked or Part Broken Lug Strap—Do not try and fix up a lug strap that is part broken or cracked, but replace it at once with a new one.

Cracked Picker Sticks—It is not necessary that the picker stick be actually split, if it is cracked a weak pick is likely to result, and it is best to replace with new one immediately.

Worn Pick Point.—If the point is badly worn, the only remedy is to replace with new one.

Bolt Loose That Fixes Stick to Shoe—This makes a weak pick. Remedy is to tighten up the bolt.

Heel Spring Too Tight—The power that ought to be used to drive the shuttle across the lay is spent in pulling against the spring. Only enough tension is required to pull the picker stick easily to the back end of the box.

Lost Motion in Cone—This is caused by neglecting to oil the cone with the result that the cone wears and becomes loose on its stud and a weak pick is the result. The only remedy is to replace with new one.

Shedding Cams Too Early.—If shedding cams are set too early, the shed will be closing before the shuttle gets full across the lay, and the result is that the shed closing on the back of the shuttle will tilt the shuttle as it is going in the box. The shuttle does not get full in the box and the loom bangs off. This also causes the shuttle to be chipped and the tip of the shuttle is often blunted. The remedy is obvious.

Shedding Cams Too Late.—If shedding cams are set too late, the shuttle will enter the shed before the shed is full open, and will be retarded in its movements and the loom will bang. Remedy, set cams earlier.

Loom Gears Worn.—This causes the loom to bang off occasionally. The teeth of the gears become worn just where the picking takes place, and this causes lost motion. To remedy this, the gears would be moved forward. The shedding and picking motions would then require to be put on right time.

Loom Stopping.—The essential difference between loom-banging and loom stopping, is that in loom banging the loom stops with a jar, while in loom stopping the shipper handle is moved out of the stand and the loom stops easily. Some of the causes of loom banging will also cause loom to stop.

Rebounding Shuttle.—A rebounding shuttle will cause loose filling. This will not raise the fork and the loom is stopped.

Filling Catching on Fork.—A rebounding shuttle will also cause this.

Filling Sliding Up and Down When Fork is Through Grate.—To remedy this two or three notches are made in the prongs just about where the filling should be held. These notches must not be sharp or they will cut the filling. The best shape of fork has been spoken of in a previous discussion.

Not Sufficient Friction in Shuttle.—If there is not sufficient friction in shuttle filling the filling will be slack and will not raise the fork. To remedy this, a piece of flannel or felt fixed near the eyelet in the shuttle will generally overcome the defect.

Fork Too Far Through the Grate.—This will cause the fork to be lifted too high and the result is that after dropping, it causes a rebound and the hook on the fork is caught by the elbow lever and the loom stopped. This occasionally causes the filling to become slack and catch on the fork.

Stop-Motion Cam Too Early.—If the cam is set too early the elbow lever comes in contact with the hook on the fork before the fork has been raised.

Stop-Motion Cam Too Late.—If the cam is set too late the fork will raise and drop back down again in time to be caught by the elbow lever, and loom is stopped.

A Crooked Running Shuttle.—This also causes the loom to be stopped. The shuttle running crooked across the lay does not enter the box straight and the end of the shuttle touches the fork causing it to jump and then be caught by the elbow lever.

Stand for the Shipper Handle Worn.—If the shipper handle stand is worn it will have to be filed so that the shipper handle will fit securely in it.

Shipper Handle Spring Weak.—There is a half turn in some shipper handles and this sometimes becomes weak and the shipper handle slips out of the stand. By strengthening the spring in handle this will be overcome.

Occasional Rubbing of Dagger against Receiver Plate.—When lay comes forward to beat up the filling the dagger should make a full clearing of the receiver plate. Sometimes the dagger rubs against the receiver plate, not enough to

make the loom hang out enough to gradually push off the slipper handle. This can easily be seen by looking at the end of the dagger which will be beveled and polished. To remedy this, the dagger will have to be reset. In resetting the dagger, have the receiver plate in position it will be when loom is running, bring lay forward and have dagger in centre of receiving plate. The fingers on protector rods should be set against the swells. When shuttle is in box the end of swell should be clear from box about one-half to three-quarters of an inch. In setting the dagger, if the receiver plate is not in the position it will be when loom is running, but is back from the position, the dagger will strike too high and will cause a smash.

Shuttle Flying Out Overfaced Reed.—By an overfaced reed is meant the ends of the reed are not level with the back of the box and the shuttle tip is turned outwards.

Underfaced Reed.—This will also throw out the shuttle. The back of the shuttle will be clipped as it is entering the box. This also causes a crooked running shuttle. An underfaced reed is often caused by the fixer striking the end of the reed with a wrench. If the reed is turned when a new warp is drawn in the reed will be overfaced. A steel straight-edge should be used to ascertain if the reed is in line with the back of the box.

Shed too Late.—If the shed is too late, there is not sufficient space for the shuttle to enter, and it flies out.

Shed too Early.—This also causes shuttle to fly out. The shed closing on shuttle before entering the box will throw shuttle out. Many of the causes that cause loom to bang off will also cause shuttle to fly out.

Picker too Low.—If the picker is too low either at the back end of box or when shuttle is being delivered the shuttle will almost certainly fly out. It is advisable to have the hole in the picker where shuttle strikes a trifle higher than the tip of the shuttle, so as to ensure the safe delivery of the shuttle. The shuttle will run with the tip of shuttle in centre of hole in picker, with the shuttle perfectly level on race iron, but the writer's experience proves that the hole in picker should be a trifle elevated. Under no circumstances must the hole be low. If the picker is too low when delivering the shuttle, the outer end of the shuttle is tilted and shuttle will strike mouth piece of opposite box or fly out. To remedy this put a piece of leather, wedge-shape, between the picker stick and parallel tongue.

Uneven Cloth Rope on Friction Let Off Binding.—The rope on friction let off often binds in damp weather. The rope becomes sticky owing to the dampness and the yarn is not let off evenly. The rope should be taken off and thoroughly cleaned, then sprinkle a little French chalk or powdered black lead on the rope and the beam will work easy. Powdered black lead is the most expensive but is the best. Only sufficient need be used to put on the rope. Tallow is sometimes used but this does not give the same results as either French chalk or black lead. The rope soon becomes sticky again owing to dust and flying particles accumulating on it. Oil is sometimes dropped on the rope by the weaver; this will also cause dust and lint to accumulate and rope will have to be cleaned.

Take-up Gears too Tight.—If the take-up gears are too tight, they will lock and uneven cloth will be the result.

Small Pinion Geared too Deep in Beam Head.—This will cause the yarn to be let off unevenly, and if there should be any small chips of iron between the teeth of the beam head this will cause the beam to jump. The beam head should be examined and all the small chips taken out.

Weak Spring Behind Pawl.—If the small spring behind

the pawl is weak, the pawl will slip over some teeth occasionally causing yarn to be let off unevenly. It is advisable to look out for this as if the spring should be broken yarn will not be let off at all and a smash will result.

Spike or Gudgeon Bent.—If the spike is bent yarn will not be let off evenly. These are bent by being thrown about on the floor after having been taken out of loom when warp runs out and at other times.

Harness Straps Lapping Each Other.—If the harness straps lap each other a jerky motion is given to the harness and this causes streaks in the cloth, especially on fine work.

Bad Selvages.—Many times cloth is rejected on account of bad selvages, even though the body of the cloth is perfect. There are quite a number of causes for this.

Not Sufficient Friction in Shuttle.—If there is not sufficient friction in shuttle or filling it is likely to curl up on selvage.

Filling Catching on Picker.—If the picker is worn and has rough places on it the filling is likely to catch on it, and this will prevent the filling from going in the cloth and the loose ends will hang outside the selvage.

Filling Catching on Lay Sole.—When the shuttle is being picked across the lay there is always a certain amount of slack filling when the shuttle is leaving the box. This loose filling sometimes gets in front of the lay sole and is caught there. This is generally seen in narrow cloths where there is plenty of space left between the sides of cloth and the boxes. This can often be overcome by tacking a piece of smooth leather to the front of the lay sole between the sides of the cloth and the boxes. If a roll board has been used and the temple should have been touching the board, this will make a rough place on board and will catch the filling; that is if a change has been made from a wide to a narrow cloth.

Harness too Low on One Side.—This will also cause a poor selvage, as the yarn will sag at the side and the filling will cling to it.

Too Much Friction in Shuttle.—If there is too much friction in shuttle on filling the selvages will be pulled in and this will cause a poor looking cloth. This will also have a tendency to make small holes in the cloth at selvages when passing through the temple. The teeth in the temple roll engaging in the cloth to keep it the required width will cut the filling where selvage is pulled in. This is especially noticeable on fine goods.

Cutting Filling Groove in Shuttle Not Deep Enough.—When the shuttle is in the box, the filling lies in the groove of the shuttle. If the face of the shuttle has been worn by constant wear and the groove is not deep enough, the filling is likely to be cut. The groove on the end of shuttle beyond the eyelet must not be allowed to wear off as this is a source of cutting filling, especially on fine work.

Eyelet in Shuttle Sharp.—This is caused by face of shuttle being worn and with shuttle striking mouthpiece of box as it is entering the box.

Shuttle Rising in Box.—When using an iron swell, the swell can be filed a little on the bottom or by bending the swell over a little, so that shuttle will come in contact with top of the swell first, and this will prevent shuttle from rising.

Temple too Low.—If the trough of the temple is too low the filling, which often gets under the temple, will be cut by temple rubbing against race plate.

Shuttle Spindle Sharp.—When using cop filling, it is sometimes necessary to open out the spindle to prevent the filling from breaking. In doing this, the end of the spindle becomes sharp and when the cop is put on spindle the filling is cut inside the cop.

FILLING BREAKING.

Pick too Strong.—If the pick is too strong the shuttle will strike hard against the picker and the filling will be broken.

Boxes too Loose.—If the boxes are not tight enough the shuttle will not be checked and will strike hard against the picker and filling will be broken.

Spindle too Small for Cop.—If the spindle is very much too small for cop, it will have to be replaced with a new one. A spindle can often be made large enough to hold the cop by opening it, but care is required so the spindle will not cut filling.

Reed Marks.—If any of the wires should get bent this will make a mark in the cloth. These are known as reed marks. Occasionally a bent wire has to be taken out and another wire put back in its place. These can often be straightened without pulling out any of the wires. If the wires in reed are clinched, straighten out the wire on top; take hold with a pair of plyers and pull the wire in reed straight. Hold wires and then clinch the top.

Reedy Cloth.—This is also known as "bare" cloth. In this cloth reed marks are distinctly visible all through the cloth, and the threads, which are drawn in the same dent, are run together. This cloth has not the same value as a good, well finished, covered cloth. It is not so good as covered cloth for printing purposes. It is not advisable to have reedy cloth and it can certainly be avoided.

Cover on Cloth.—A cloth with cover on it has a soft feel to it. This is caused by the filling being thrown on the face of the fabric. This cloth is produced by the manner in which the harness are set in relation to the whip-roll and breast beam. If the harness eyes are on a straight line with the whip-roll and breast beam, when the harness are opened the threads will open an equal distance, and an equal tension is on each half. This gives reedy cloth.—From the Textile Excelsior.



ELECTRIC POWER IN BRITISH TEXTILE MILLS.

The Electrical Engineer, London, England, commenting upon the use of electricity in British textile mills, says: "The limited adoption of electric motors for textile machinery is due rather to the conservatism of British mill owners than to any fault of the power agent. Trade depression has also done much to retard progress in this direction. Were the electrical engineer asked to specify the most suitable time for putting in an electric plant, he would choose a moment when the mill was working at low output and numerous machines were idle, so that any delays incident to the change would be of little importance. But, on the other hand, when business is poor, the management are seldom inclined to incur the considerable expense entailed. Further, the insufficiency of antiquated methods of power distribution is less keenly felt than when the plant is working at its maximum capacity, when a brief cessation of the power supply would greatly disorganize the work. With orders pouring in and the plant working day and night, the owners feel justified in greater outlay on improvements, and in consequence this time is generally chosen for the electrification of a mill. The wisdom of the policy is open to doubt, but the facts are obvious. Much credit is due to the engineer for the ingenious manner in which delays in changing over have been avoided; in numerous cases the electrical plant has been put in without the slightest degree affecting the continuous operation of the mill. But probably the advantages of electric power would have been better exempli-

fied had it been possible in these cases to modify the transmission system further than by simply substituting motors for the various steam-engines employed to drive the shafting. While the driving of the majority of machines by individual electric motors is not considered the best practice from either a technical or an economical point of view, the grouping of machines driven from one source of power can often be improved upon to a great extent in changing over, resulting in improved working conditions and decreased expenses."

The following description is given of an electrical installation grafted on to an existing mechanical system, at Sir Titus Salt's extensive works, Saltaire. The mills are driven by small steam plants laid down at several different points. The twisting shed is, however, located about 500 yards from any part of the main shafting, and it was therefore decided to drive it by electric power, rather than incur the great friction loss of mechanical transmission over such a distance. Current is generated by a Westinghouse alternator of 100-h.p., on the three-phase system, which runs at 440 volts and 720 revolutions per minute. It is driven by eight cotton ropes from a pulley 4 feet in diameter on the main shaft, running at 340 revolutions per minute. A smaller dynamo is used as an exciter. The plant has been running ten hours a day for eighteen months, and has required practically no attention. Starting and stopping are very simple, and no skilled supervision is required at any time. The Westinghouse induction motor, located at one end of the twisting shed, is of 75-h.p., and drives the line shafting by six cotton ropes running on grooved pulleys. Twenty twisting frames are at present driven by the motor, each having 180 spindles running at 2,500 revolutions per minute. The frames are driven by belts from the line shafting, and any of them can be isolated when required by the use of loose pulleys.

The polyphase induction type of motor, as here exemplified, is without a doubt superior to any other electrical machine for such work. It is simple and efficient, it can stand treatment that would inevitably ruin a direct-current machine, and it abolishes the bug-bear of sparking. The rotating member, or armature, of this motor contrasts strongly with the equivalent part of the more familiar direct-current motor, consisting simply of solid copper bars laid in slots in a laminated core, these bars being bolted at their extremities to heavy copper end rings. There is no insulation, no small conductors liable to injury, no thin "band wires," and no commutator. These advantages are unquestionable, and demonstrate clearly the superiority of the alternating-current system for electric power distribution in cotton mills.

The above plant, though but of small size, is interesting as showing that British textile manufacturers are evincing a disposition to adopt methods which have been in use in Canadian mills for some years.



COTTON GROWING IN FIJI.

The secretary of the Manchester Chamber of Commerce has received a letter from T. F. Burness, of Caboni, Fiji, who desires to enlist the practical help of the Chamber to induce the British Government to enable uncultivated land—of which there are upwards of one million acres—to become available for the production of cotton. Mr. Burness says it seems to him, as a Britisher, a scandal and a shame that such a valuable asset of the Empire should not be rendered available for the cultivation of a product so vital to the Empire's welfare. He proceeds: "On my plantation,

I have now growing a variety of hybrid cotton, a sample of which I send you. It is perennial in Fiji, grows to a height of 14 feet in good soil, and, if cultivated, bears for many years without replanting. The yield from this variety is very much in excess of any kind with which I am acquainted. The cotton does not stain with wet as does the Sea Island variety, and the seed comes away readily from the lint, thus rendering the whole of the lint available for manufacture, and leaving the seed more valuable for oil purposes. The climate of Fiji is most equable, and in no respect unfitted for the residence of Europeans. . . . Every kind of cotton grows well here."

THE FELTING PROPERTY IN WOOL.

As a manufacturer, I gave the felting property in wool but little consideration, except in a general sense, and learned to know the felting property by comparison and experience only, which is quite a different thing from considering the individual fibre, the only way to properly study wool. The fact that wool would felt was known before the art of carding and spinning was discovered. To felt wool requires heat, moisture and motion, all of which would be supplied by weaving wool near the human body. It is one thing to know that wool will felt, and quite another thing to know why and how it will felt. It was about the year 1795 or earlier, that M. Monge, a French savant, discovered what he was pleased to call "serrations" on the surface of the fibre of wool, and stated his belief that it was the interlocking of these "serrations" during the motion made by the fulling mill that caused the action of felting. This has been accepted by manufacturers, microscopists and others who have given the felting property any consideration. While editing the "Boston Journal of Commerce," the mysterious felting property in wool forced itself on my mind continually. That the reason given was not correct was apparent to me, and some good articles were the result, containing valuable facts which manufacturers should have treasured up. During the year 1883 to 1884, the principle of felting was revealed to me, and contrary to my usual custom, I did not make this public at the time, but determined to keep it a few years and see if the microscopists, who were making a big stir at that time, would not stumble upon it. The late A. Spitzli was then president of a microscopical society with headquarters in Boston and another in New York. To give them a better chance, I wrote an article and did all but make the fact public, still it remained undiscovered by them. Sometime during 1884, Colonel C. W. Jencks called at my office and I stated to him my discovery. In the "Rural World," for August 4th, 1884, in an article under the head of "The Angora Goat," I found the following statement: "Within ten days I have made in connection with it (mohair), the important discovery that part of the fibre will felt and part of the same fibre will not felt." This is another illustration, warning inventors to keep their own counsel and not place too much confidence in friends. The late Dr. John L. Hayes, secretary of the National Association of Woolen Manufacturers, in reproducing one of my articles in the Bulletin, commented on it as follows (I quote from memory): "Then it appears that there is something in the felting property of wool yet undiscovered. Can it be that the fibre felts within itself?" Even this did not open

the eyes of the "wiseacres" of that day, and I have allowed the matter to rest until now. Being a descendant of a race of broadcloth manufacturers, and having in boyhood followed every detail of the business as an observer, and being blessed with a good memory and reasoning faculties, there is little about this business that I do not remember. All manufacturers know that when wool gets fast to a steam pipe in a dye kettle, and is left there while the water is boiling, it will felt, while the loose wool in the kettle will not felt. The wool, being held fast, is moved violently in the water, hence there is heat, moisture and motion, and felted wool is the result. The best felting wools do not have the serrations as defined by M. Monge, and those who have followed in his track, accepting his errors, have done little thinking and investigating. For the past one hundred years the theory had been accepted that the fibres interlocked in fulling and that the saw-tooth-like serrations caught hold of each other and in this manner felted. It must be remembered that while this is going on the fibre is rendered limpid by hot soap and the high temperature generated in the mills. Let any manufacturer put theory aside and bring practical, common sense to bear, especially when making a thirty-two ounce kersey out of Australian wool, and he will find that it is simply impossible for fibres of wool to work their way into each other, to any great extent, producing felted cloth. Let those who have any faith in the old theory take a single fibre of Australian wool and try to force it into cold water even, let alone into a piece of heavy beaver, when softened by hot soap and a high temperature in the mill. The whole theory is too absurd for a moment's consideration. When the discovery came to me I took two locks of mohair, or very coarse wool, and sent one to Capt. T. J. Rigney, then finisher at the Taconic Mill, Pittsfield, Mass.; the other I sent to O. F. Ireland, then finisher at Goff's Falls, N.H.

These locks of wool were put into the mills and fulling with the cloth. On the return of these two samples the discovery was confirmed. They came to me in precisely the condition I expected, and I was satisfied. To make myself better understood, let us suppose a good, healthy merino sheep, newly clipped, on which we will put a coat closely fitting over the whole body, and in this way grow the fleece without light ever shining upon it. This would produce a perfect felting fleece and leave no loose, badly colored hairs on the face of fine kersey cloth, but would handle like a board. On the contrary, let us take a long woolled English sheep, the fleece grown in full daylight, exposed to the sun at all times, and it would be impossible to felt it, except the small portion from No. 1 to No. 2 on plate one. This portion would felt because grown in the dark, i.e., covered by overlapping locks. We are told that "extract" will not felt because the acid used in carbonizing has eaten off the serrations. This is also erroneous theory. The fact is, the acid hardens the wool fibre so that it cannot shrink within itself; hence there is no felting. This hint should be valuable to flannel manufacturers. Where the light shines on the side of the locks on the sheep's back, the wool will not felt, or but imperfectly, in proportion as it is exposed. It is well known that merino wool is only exposed to the sun at the tip or end of the fibre, as the fibres are held together by the yolk which grows with all merino wool. Where there is yolk there is felting property, because the fibre is kept in an unhardened, gelatinous state, proper for felting, and not a hairlike fibre as in Eng-



lish wools, which will not felt, and hence are used for braids and the coarser worsted yarns. There is another impression that is very general and equally erroneous, namely, that worsted cloth will not felt. It is easy to understand how this theory gained credence, for it is only in the past ten or fifteen years that soft merino wools and their crosses have been combed to any great extent and used for men's wear. Originally worsteds were made out of long, hard wools, combed with the hand comb. But with the advent of the machine comb and its rapid improvement, the combing of the short merino wools became possible, and now almost any wool that it will pay to comb can be combed; hence all the finer worsteds would felt, even if the fibres were laid absolutely parallel, if felting were desirable. During my investigation, I questioned all the knowing ones to find out if possible what was wool and what was hair, and also where wool began and hair left off. No one could answer this question, and yet it is very simple, and is fully answered in this article. I will state it more clearly. Wool exposed to the light while growing has all the properties of hair. Hair grown in the dark or matted together with the yolk of the fleece possesses the felting properties and would be known as wool. Hence wool and hair can exist in the same fibre, as in the Cotswold, Shropshire, etc. Short-haired animals, as the horse and cow, shed their hair annually. The deer family shed twice, in the spring and fall. The Angora goat, if crossbred, will shed the short, common goats' hair and carry the long Angora hair. Neither sheep nor Angora goats shed their coats if in good health, and their food is not suddenly changed. Plate 2 shows a perfect lock of Australian wool. Plate 3 shows a lock of Australian wool with a tender place which is produced during drouth. The length of time the drouth continues is as accurately registered on the wool as time is on the dial of a clock. The fleece from which the tender lock came, was shown to the writer with great pride by a wool importer, when before touching it I said: "It's tender." The importer denied this, but on examining it he threw it in the corner and talked about something else.—Jos. M. Wade in Fibre and Fabric.



3.

NEW CORPORATIONS.

The Novi Modi Costume Co., Limited, Toronto. Capital, \$99,000. H. C. Boulter, A. S. Bowers, J. J. Gibbons, H. F. Gooderham, and F. D. Hogg, all of Toronto. To manufacture and deal in clothing, wearing apparel, and general dry goods, also to take over the business, assets and liabilities of the Novi Modi Costume Company (incorporated in the province of Quebec).

The Imperial Button Works, Limited, Montreal. Capital, \$100,000. T. Lidstone, A. W. Belfry, M. MacFarlane, R. H. Welden, and P. S. Saunders, all of Montreal. To purchase the Imperial Button Works, of Montreal, and to manufacture, sell and deal in buttons, novelties, ornaments, fancy goods, braids, tassels, fasteners, and boxes.

Church & Watt, Limited, Simcoe, Ont. Capital, \$100,000. J. W. Church, W. A. Watt, T. F. Richards, of St. Mary's, Ont. To manufacture harness, saddler hardware,

robes, whips, blankets, trunks, leather bags, fly nets, gloves, fur coats, fur caps, etc.

W. E. Chalcraft & Co., Limited, Toronto. Capital, \$100,000. G. Randall, Waterloo, Ont.; Clara Chalcraft, E. S. Howard, C. K. Burt, J. C. Beyer and A. J. Rutland, of Toronto. To purchase the business of W. E. Chalcraft & Co., and manufacture, buy, and sell clothing and dry goods.

The Enterprise Hosiery and Underwear Company, Limited, Toronto Junction, Ont. Capital, \$40,000. T. Prest, R. A. O. Hobbes, J. A. Ferson, and W. A. McMaster, of Toronto Junction, and William Smith, of Almonte, Ont. To manufacture and deal in knitted garments, whitewear, etc.

W. H. Lailey & Co., Limited, Toronto. Capital, \$100,000. W. H. Lailey, F. Maile, J. H. Trimble, C. E. Lailey, F. L. McCollum, of Toronto. To manufacture clothing, woolen, and other goods.

The Empire Carpet Company, Limited, Dundas, Ont. Capital, \$75,000. J. F. Morley, of Hamilton, Ont.; T. Etherington, J. H. Etherington, Jr., and Joseph Etherington, of St. Catharines, Ont.; A. E. Danks and J. F. McAllister, of Toronto. To manufacture and deal in carpets, rugs, yarns, wool, cotton and jute; to purchase the good-will, plant, stock, machinery and assets of the Empire Carpet Company of St. Catharines.

The Ladies' Wear, Limited, Toronto. Capital, \$100,000. Sarah Keith Currie, J. P. Watson, G. F. Watson, Annie E. Hills, and F. P. Evans, of Toronto. To manufacture, import, buy, sell and deal in all kinds of ladies' wearing apparel, neckwear, furnishings, small wear, etc.

Greenshields Western, Limited, Winnipeg, Man. Capital, \$500,000. E. B. Greenshields, G. B. Fraser, E. C. B. Featherstonhaugh, of Montreal; A. W. Johnston, R. R. Gallagher, and G. M. Newton, of Winnipeg. To carry on a general dry goods and manufacturing business.

The Fred. Irvine Co., Limited, Nelson, B.C. Capital, \$50,000. A. Mainwaring-Johnson, and others. To carry on a general dry goods business.



FINISHING WOOL AND MIXED FABRICS.

Wool is bleached in the form of raw stock, yarn or piece goods. We will describe here the bleaching of piece goods only.

In early times the stoving process of bleaching in closed chambers with sulphur was the only method used for wool. Recently other means have been employed, such as sulphurous acid solution, hyposulphite of soda, potassium permanganate, various chlorides, hydrogen peroxide and electricity.

Very good results have been obtained with hydrogen peroxide, but, unfortunately, the cost of the process is too high to admit of its general use.

The electric bleaching process has not yet proved successful, and in spite of all attempts to find a substitute for the sulphur stoving process, manufacturers are still compelled to use that method with all of its disadvantages.

BLEACHING WOOLEN CLOTH WITH SULPHUR.

There are two methods of handling the pieces in this process; in one the goods are hung on racks in the stoving chamber and left undisturbed until the sulphur fumes have done their work; in the other the pieces are carried slowly through the chamber on rollers, so as to thoroughly expose the cloth to the fumes.

This process is used only for plain white woolen pieces or for fancy goods in which the ground work is white. In the latter case the colors must be fast to the sulphur.

By the stationary process the scoured pieces, while still wet, are hung on pins in the sulphur house and in loose folds so that all parts of the goods may be exposed to the full action of the sulphur. The pins should be heavily tinned to prevent rust spots.

The sulphur is placed in a cast iron kettle on the floor of the chamber, and ignited by placing pieces of red hot iron with it. The door is then shut and the goods left in this condition until sufficiently bleached, generally over night. The goods are next rinsed in clear water.

Care should be taken not to use for handling other goods the tools and implements used in this process, as the adhering sulphur will injure or destroy the colors. The bleached goods should be dried in the open air as this preserves the whiteness of the wool; if dried in a closed room at a high temperature, the bleached wool is liable to assume its original yellow color.

The stationary process has the following disadvantages:

1. The water has a tendency to settle in the lower part of the pieces, causing an irregular action of the bleach.
2. The effect of the sulphur is apt to be strongest near the kettle in which it is burning.
3. The patterns in fancy goods may be twisted out of shape by hanging on the pins, and remain in this shape.
4. Yellow or yellowish green spots are sometimes caused by drops of impure water falling from the ceiling on the goods.
5. The fumes are injurious to the health of the workmen.
6. Much sulphur is lost when the room is ventilated preparatory to changing the pieces.

To remedy these defects the continuous process is employed by which the pieces are slowly carried forward in the open width through the sulphur chamber.

Fig. 97 shows an arrangement for this purpose. Owing to the presence of the fumes sulphur houses are located at some distance from the other buildings.

In the illustration, four different compartments are shown. At the left is the fire room (C), in which the sulphur is burned in the iron basin (A). The iron door (K) is fitted with a damper to admit air to the burning sulphur.

The fumes pass through the holes in the opposite wall of this room, as indicated by the arrows, then into the spaces (D), whence it passes through the openings in the floor (E), into the bleaching room (B) above. On each side of this room are placed rollers over which the cloth is carried back and forth in the open width.

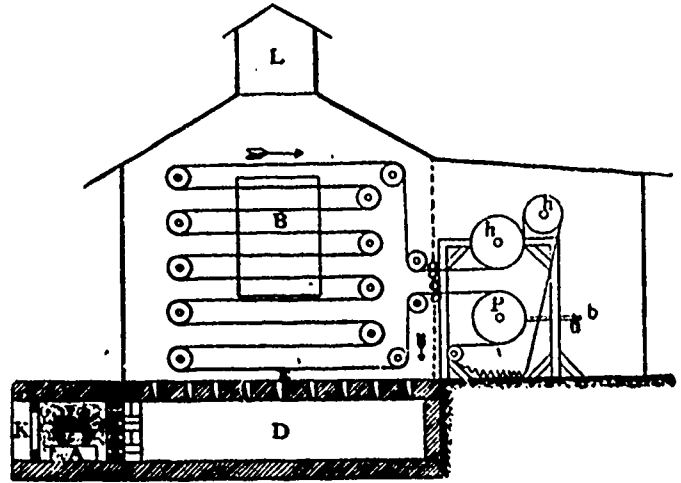
A window enables the attendant to look into the room during the bleaching process. An adjustable ventilator (L) is placed in the room. The speed of the cloth can be regulated and the pieces are passed through the room as many times as are necessary.

The unbleached cloth in the room at the right passes over the friction roll (P), by which the tension is regulated; thence between two small rolls into the bleaching room where it is carried back and forth over the rollers and finally between small rollers back to the room from which it started and over the drums (h, h). The rollers are driven by power and the tension on the cloth should be sufficient merely to prevent wrinkles.

In many sulphur rooms the cloth instead of crossing the room, is passed up and down, an arrangement that facilitates the thorough and uniform distribution of the sulphur fumes through the goods.

By the continuous method just described, the cloth is kept at the same degree of moisture during the bleaching process, a condition essential to uniform results. A blue

tuge is sometimes given to bleached wool to relieve the intensity of the white.



This process is employed for certain kinds of goods, principally those intended for the Orient, on which the sulphur bleach does not give the desired clearness.

The goods are handled in a cold solution of permanganate of potash for one-half hour, one-half pound of the permanganate being used for each forty pounds of goods. The pieces are then taken out, folded on a table and left in this condition for some time. Towards night they are treated in a sulphuric acid solution, being left in this bath over night.

The wool comes from the first bath a pale red; from the second a clear white.

On the following morning the cloth is taken from the sulphuric acid bath and entered in a solution of pulverized chalk, to which a small quantity of methyl-violet has been added. From six to nine pounds of chalk is used for each piece.

In this bath the goods are kept for about an hour at a temperature of 120 degrees F., when they are dried without washing, and the superfluous chalk removed by a whipping machine.—By N. Reiser, in the Textile World-Record.



SULPHUR COLORS ON HOSIERY.

By far the most satisfactory of all the known dyeing processes for hosiery are those based upon the use of the so-called sulphur colors, when carefully and properly applied to the cotton fibre. In the early stages of their introduction there was much diversity of opinion as to the permanence of the black and the strength of the dyed material, but recent results, based upon tests covering several years, demonstrate conclusively that the sulphur blacks yield results that meet every technical and commercial requirement, and it is only a question of time as to when all hosiery-dyeing works will be equipped for this new process. By the term "new process" we mean the several processes peculiar to the different types of sulphur colors; while each separate type of color is peculiar to itself, yet the broad principle underlying all is exactly the same.

The sulphur blacks have marked affinity for cotton in any form, and when applied to the fibre in a boiling bath in the presence of the suitable accessory chemicals or salts, the results are remarkable. The color is fast to all influences. When properly washed after dyeing it does not crack, rub or smut, and when properly dyed with suitable quantities of ingredients in the bath the color will not fade.

under any influence, and will resist continued washing to the limit of endurance of the stocking itself. As to the bleeding of the black into adjacent white material, like any other similar color, this is only likely to occur when the washing is not thorough enough.

Some sulphur blacks are dyed in one operation, and all completed when lifted from the dye-bath, washed and dried. Others require to be fixed—that is, in order to fix the color on the fibres, it is necessary to subject the dyed materials to the action of certain metallic salts of an oxidizing tendency, the most important being copper sulphate and bichromate of potash. Other salts answering the same purpose have been used in a few instances, but the cheapest and best results are secured with the two above mentioned.

Some sulphur colors require special precautions for dyeing, such as guarding against the action of the atmosphere by keeping the hosiery totally immersed during the dyeing. Some blacks require the addition of sodium sulphide to the bath; others do not. Again, a few cannot be dyed without the presence of caustic soda. These are mere details, and have a chemical bearing upon the process only, while the results may be exactly the same. The one essential point for all sulphur blacks, irrespective of details of making up the baths, is the absolute necessity of boiling during the dyeing operation. Unless this is done, the resulting black will not possess the good qualities hoped for.

Hosiery manufacturers, especially those who do not have dyeing plants, should look carefully into the possibility of dyeing their own output with the sulphur blacks, as they will thereby be enabled to materially economize and incidentally reduce the yield of seconds. Hosiery dyed with any of the commercial marks of sulphur blacks, each of which has its own peculiar shade of black, however, will be found to have many excellent qualities, and will be in good condition to be finished in any way desired.

The wearing qualities of sulphur black dyed hosiery compare favorably with hosiery dyed by the aniline black process, in that heels and toes do not wear out as easily. There is no doubt that the sulphur blacks are the blacks for hosiery of the future. The cost of installing a dyeing plant is much less than for any other process, while the dyeing estimates for equal lots or outputs for a definite time will show a much lower figure, not including known savings on seconds. For hosiery yarns the same points hold good, and as yarn-dyed hosiery is usually of a much higher grade than web-dyed material, the saving will be at once apparent. Yarns dyed with the sulphur colors are, as a rule, much stronger than those dyed with aniline black, and consequently the delays are less numerous at the knitters. This effects a material saving in the general expense account of the mill—Textile Mercury.



TRADE ENQUIRIES.

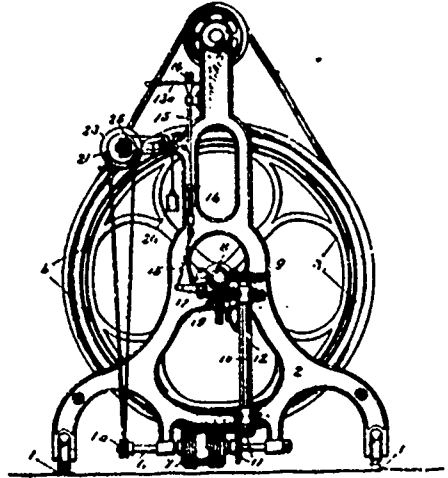
The following were among the enquiries relating to Canadian trade received at the Canadian Government Office, in London, during December. For the names of merchants and agents in Canada who handle woollen yarns. As to the chances of success of a small wool-combing plant in Canada, and as to a suitable locality for the same. By a London firm interested in the flax trade, for names of exporters from Canada of this article or of parties who would be exporters if opportunity offered. A manufacturer of woollen corded yarns of all classes wishes to develop trade in Canada, and asks to be placed in touch with Canadian importer or manufacturers' agent possessing the necessary connec-

tion. Enquiry has been made for the names of Canadian manufacturers of carpets.



NEW WARPING REEL.

The accompanying cut illustrates a new warping reel on which Richard J. Chowen and William Hartley, the former master mechanic, and the latter boss weaver at the Auburn Wool Mills, Peterboro, Ont., have secured patents in Canada, United States, Great Britain, etc. The invention applies to the improved class of warping machines where the section pins are dispensed with and the yarn is applied in layers to form a truncated cone. By an improved mechanism the section of yarns is fed to the reel with a uniform lead to and



from the end on which the section is commenced, and an indicator automatically registers the width of each section. Mr. Hartley goes to North Andover to arrange with the Davis & Furber Machine Co. for the sale of the United States rights, and negotiations are in progress with a New York firm for the right for Great Britain, France, Belgium and Sweden.



AUSTRALIAN WOOL MARKET.

Eug. Troost & Co., wool merchants, Melbourne, write, under date of 14th November: The opening of the Victorian wool season took place on the 27th October, when a catalogue of 1,750 bales of medium selection was submitted to the largest number of buyers ever seen in this market.

The offerings of the first week were mainly composed of clips from the Riverina, the Lower Darling and Queensland, which sold under a strong English and French competition at prices which showed an advance on last year's opening rates of 5 to 10 per cent. for merino wools, 10 per cent. for fine crossbred wools, 20 to 30 per cent. for medium, and 35 to 40 per cent. for coarse crossbred wools. German buyers have so far shown a great reluctance to operate at this level of prices, whilst the American representatives could hardly show their hands owing to the paucity of the offerings. During the past week a general decline of fully 5 per cent. has taken place, and present prices are about on a par with the annexed table of quotations. At these reduced values, competition has become more general; both Germany and America are now participating in the purchases.

Prices for the best Geelong merino clips remain from 17d. to 2d. behind last season's rates. The latter were

warranted, to a certain extent, by the fact that last year Riverina wools were too short in staple and too poorly grown for the United States, so that Geelong was the only market for the so-called light and stylish American wools. But to-day these same wools are less fine and carrying far more yolk than last year, whilst there are many Riverina clips which will again suit the American demand, which explains the difference in values for the Geelong wools, as compared to last season. Generally speaking, the clip is much better grown and less burry than its predecessor, but also less fine, and carrying far more yolk, so that yields may be from 2 to 4 per cent. below last year's. Fine wett wools will be extremely scarce. The present season is the latest on record; this is due partly to the late lambing, which delayed the start of shearing, and partly to the wet weather we have experienced during the past month. The quantities sold in this market, since the opening of the season, amount to only 30,500 bales, as against 59,500 bales last year. Owners are now meeting the market readily, and there is every prospect of a large business being done from now to January next.

With regard to production, it is rather early to venture an opinion; there seems no doubt that this year considerably less sheep have been shorn in New South Wales and Queensland than in 1902, as the disastrous drought and its consequent losses in stock lasted until April, 1903. But the clip cuts much heavier, and the grower who shears less sheep this season gets frequently more bales than last year, owing to the broader growth and the increased amount of yolk in his wool. Therefore, there is a divergency of opinion on this point, but whatever the ultimate statistical position will be, there is some justification for the assumption that owing to the lessened yields, the supply of Australian wool will again remain behind last year, as far as it relates to the amount of clean scoured merino wool obtainable from the present clip. The pastoral outlook is most promising, and in nearly all the great sheep districts of Australia grass and herbage are exceedingly abundant. With another good season next year, one may reasonably expect a normal increase in production after 1904.

Freights.—Steamer rates are ½d. and ¾d. for greasy and scoured respectively; sailers quote ⅓d. less.



ELECTRICALLY-DRIVEN LOOMS IN GERMANY.

The Electrical Engineer, of London, England, states that a co-operative enterprise with a view to supplying the domestic weavers (of the silk ribbon trade), in the Southern Black Forest with electric power has lately been started in the Hotzenwald district, it being contemplated to drive by electricity the looms of 500 weavers living in twenty-eight different localities. The first cost of the whole of the power plant is estimated at about \$82,800, this sum to be supplied by the Wald-Elektra Sackingen-Waldshut Power Company, apart from a grant by the Government. The significance of this enterprise is its enabling the above branch of textile industry to be preserved as a home industry, securing a yearly income of about \$73,000 to the poor inhabitants of that part of the forest. Moreover, the diminution of strain on the physical strength and health of the weavers will allow of people of even moderate strength devoting themselves to domestic weaving without endangering their health, so that a rational division of work can be made between the members of the same family, especially during the season of rush in the silk trade. Weavers will also be in a position to deal with

stouter goods, securing them higher profits, apart from the sanitary advantages attendant on electrical operation and lighting.



BRITISH WOOL AND TEXTILE MARKETS.

(Special Correspondence, Canadian Journal of Fabrics.)

With the approach of Christmas, business is becoming gradually less and less, in fact it has almost reached the stage of stagnation. The hardening tendency, which showed itself towards the close of the sales, is still in evidence, and there are no bargains to be obtained in wool in spite of the fact that a good many firms take stock at the end of this month. On the other hand, buyers are also adopting a waiting policy and very few wools or tops are changing hands. Last week I spoke to two large continental buyers who were pessimistic with regard to the prospects of business on the continent. However, it did not appear to them that prices would go materially lower than they are at present.

Reports from Germany state that the market on raw material is very fair. A large strike at one of the principal manufacturing centres is affecting business somewhat, but as long as the strike does not spread, it will not have any considerable influence on woollens and worsteds. A large business is being done in zibelines, especially those in the manufacture of which silk noils are used. On the other hand the mohair zibeline is not by any means so much in demand as formerly. Hosiery and underwear business is very good, and the Jaeger and other manufacturers are sold well forward.

The reports from Australia are by no means so glowing as those of a few months ago. A few weeks since, we were told that the market there was advancing, but I have good authority for stating that such an advance never existed, and in any case the slump at London soon made itself felt in Australia.

A considerable number of merchants here expressed the opinion that the slump in London was manipulated by the large buyers in order to bear the market and to make their purchases from the colonies on a low basis. Whether such is the case or not remains to be seen. As far as Yorkshire is concerned, and as far as one can gather from the existent condition on the continent and in the United States, woollen manufacturers are not busy, and this factor controls the market much more than any manipulation on the part of buyers or sellers.

With regard to rags and shoddies, the demand for blacks still continues, and several large orders have been placed for different grades of Government clips, which had been accumulated for months. In other grades prices are firm, but only a moderate quantity of orders is being placed. The price of cotton is causing alarm, not only to spinners and manufacturers, but also to the retail trade, which sees itself obliged to pay higher prices and is afraid of purchasing at current rates.

An important textile exhibition is to be held in Bradford during the coming year in the Cartwright Memorial Hall, which will then be opened. To all who are interested in dress goods, and to cloth manufacturers in general, this exhibition should be of interest, as it will be of an international character, and already exhibits from the principal continental manufacturing firms have been promised.

Bradford, Eng., 22nd December, 1903.

TEXTILE PATENTS.

The following patents, relating to textiles, have been issued in Canada since the publication of our last list:

No. 82,182. A. A. Vogelsang, Dresden, Germany, a process for the electrolytic bleaching of cotton and other textile materials in bulk without moving or handling during treating, by electrolyzing a solution of common salt and treating the material with the same, then circulating it downward through the material, and after rinsing finally treating it with dilute sulphuric acid to abstract any remaining traces of the salt solution.

No. 81,908. A. M. Zeigler, Boston, Mass., U.S.A., an elastic fabric composed of elastic warp, a binder warp, and filling, the filling at predetermined points in the weaving extending but partially through the fabric to thereby provide a crook in the fabric when the elastic warp is released from tension.

No. 81,946. A. C. Hough, Worcester, Mass., U.S.A., a loom in which is a twister head for feeding the warp threads into the loom, and means in combination with the same for putting a tension upon the warp threads whereby an even feed of the latter will be assured.

No. 81,947. A. C. Hough, Janesville, Wis., U.S.A., warp supplying means in a loom and means for supplying filling strips or splints, comprising a shuttle adapted to alternately carry strips from opposite ends of the loom and means whereby the splints are automatically and positively disengaged from the shuttle at suitable points.

No. 82,143. R. G. Campbell and C. Cone, Greensboro, North Carolina, loom mechanism, comprising a picker lug strap having heads at each end separable vertically and longitudinally and a universal joint in the strap in combination with a picker stick lever to which one of the heads is clamped and a picker stick to which the opposite head is loosely attached and a flexible connection between the latter and the picker stick.

No. 82,190. Frederic ter Weele, Saont, Die, Voges, France. A spinning and combing apparatus.

No. 82,641. F. Belanger, Langdon, North Dakota, U.S.A., darning machine.

No. 82,642. R. S. & H. Cookson, of Philadelphia, Pa., U.S.A., a woven jute fabric, having the usual back of jute and binder warp threads, and the weft and the shuttle threads, and provided with pile or loop warp threads arranged in sets of six single ends, which are brought to the face of the fabric when required, independently of the other ends, and all arranged so that in one set or weave two or three ends are looped as required and the remaining ends buried in the fabric.

No. 82,638. H. Sanche, New York City, U.S.A., an electrical conducting fabric constructed of an intermixture of non-metallic filaments and electrical conducting strands worked in together.

No. 82,520. E. A. Homer, Allentown, Pa., U.S.A., manufacture of figured knit fabric.

No. 82,518. B. C. Mudge, Snow Falls, Maine, U.S.A., the method of freeing flax fibre from shives and preparing flax from flax tow. Forty claims.

No. 82,530. G. A. Fredenburg, Pawtucket, Rhode Island. Thread twisting machine.

No. 82,639. R. J. Chowen and W. Hartley, Peterborough, Ont., Canada, warping reel. See page 12.

No. 82,532. J. Good, Far Rockaway, N.Y., and J. D. Fairchild, Brooklyn, N.Y., a ball or cop winding machine.

Foreign Textile Centres

Manchester.—Yarns.—The week has been one of nominal trading. Spinners of twist and weft from American cotton have had to advance their rates $\frac{1}{4}$ d. and again $\frac{1}{4}$ d. per lb. This shut off all business that could be deferred, and transactions put through revealed cuts into spinners' margins, in some counts the border line was crossed, and orders were booked that showed a loss. Users of both mule and ring yarns are waiting, and will not place new contracts. Bolton yarns continue dull, but are worse to buy, being dearer in sympathy with the rise in the Egyptian staple, which has followed American upward. Shipping yarns are neglected all round. Cloth.—The week opened with Mexicans and shirtings 3d., and printing cloth 3d. to 6d. per piece dearer. The trend of raw material and finished fabric have since been upward. Offers from buyers, acceptable a week earlier, are quite impracticable, being on some classes 10 to 20 per cent. "out." Makers of fine fabrics are firm by reason of contracts not worked off, there being few new bookings. Heavy goods, depressed, but price of cotton keeps market firm. With raw material at $7\frac{1}{4}$ d. business all round is blocked.

Bolton.—Young & Co.'s mill, Little Lever, with 300 looms, is to be closed, owing to depression. This makes the second in a short period.

Huddersfield.—Little or no business doing. Prospects for next season's trade not bright. Stocks of cloth low, and utmost caution exercised regarding prospective trade on new patterns.

Bradford.—A slightly improved feeling. With the somewhat freer movement of dress goods, there is a little more hope for merinos. Indications point to a revival of trade.

Blackburn.—The Blackburn Weavers' Association, in its half-yearly report, states that during the last six months trade has been going through the roughest times experienced for many years. The loss of wages in their district was nearly £80,000.

Leeds.—Trade quiet, and little fresh business expected before the new year. In most departments the season has been disappointing, with business much below the average, especially in worsted, but some worsted houses have booked encouraging export orders, chiefly Indian. This will necessitate working full time. In the ready-made trade little doing for the great industrial centres, but fair number of orders received from agricultural districts.

Rochdale.—The flannel trade is almost at a standstill, but prices firm. It is expected that the mills will continue to work short time on account of the absence of the usual demand and the determination of manufacturers not to increase their stocks, which are not large.

Belfast.—Not much change in demand. Moderate transactions in flax at full rates. White goods dull in home markets. On exports a full average trade, with prospects of improvement with the colonies and the United States.

Dundee.—Rise in jute, which is quoted at £13, the best kinds scarce and dear. No change in yarns. Looms have been busy on Plate hessians, orders for which, if not large, are numerous. Flax excites keen interest, as war would increase cost of Russian. Should this occur, added to the present scarcity, nobody can predict the possible rise on Russian flax fibre, and trade is already stunned at existing prices.

Kidderminster.—A slight spurt in a somewhat sluggish

trade on special orders before Christmas. Tendency of prices of raw material once more in favor of the seller. This is unusual at this period, and is regarded as a hopeful augury for the New Year.

OILING OF WOOL AND ITS INFLUENCE ON DYEING.

The question of the effects of oiling the wool upon the subsequent processes of mordanting and dyeing is one which has not received much attention in the technical press, and yet it is well worth notice.

Between the shearing the wool from the sheep's back and its appearance in the form of a finished fabric the wool has to pass through quite a series of operations which need not be given in detail here; the two preliminary treatments and the final ones of dyeing and finishing are all with which we are immediately concerned. The raw wool is first of all subjected to a washing treatment to remove from it dirt, fat, and impurities with which it is naturally associated, and after this it may or may not be carbonized. The wool fibre has essentially a scaly structure, and it is found that when cleansed it does not spin or weave easily, as the scaly structure enables the wool fibres to interlock too readily, and therefore they do not move over one another with the freedom that is essential in order to spin a thread to the greatest perfection or to weave a fabric uniformly. It is found that by oiling the wool before spinning it becomes lubricated, so to speak, and may then be spun into thread and woven into fabrics with the greatest ease.

For the purpose of oiling the wool a variety of oily bodies are used, all more or less costly, and each wool manufacturer has his own idea as to the best for his purpose, being guided by the question of cost and by the consideration he gives as to the carrying out of the subsequent processes through which the wool must go. There are some wool manufacturers who take these subsequent processes into consideration and who regulate their mode of working accordingly, but unfortunately there are others, however, who do not, and aim only at getting through what they have to do without any consideration of the subsequent treatment of the wool.

Fatty oils, like olive oil, lard oil, neatsfoot oil, etc., are used, and these are excellent for the purpose, but they are expensive. Such oils as rape oil, cotton oil, and linseed oil have been used, but are objectionable, as they have been found to lead to spontaneous combustion of heaps of wool oiled with them. Another product is oleic acid, or, as it is called oil, a by-product in the candle-making trade, which is somewhat less expensive than the oils above named. This is also good, and has been found to give satisfaction. Oleines, mostly obtained from crude or recovered greases by distillation, have also been used. These are of very variable composition, and are more or less complex mixtures of oleic acid, unchanged saponifiable oils and unsaponifiable oils. They are cheaper than either of the other two kinds of oily products. They are more or less satisfactory in use, but much depends upon their composition; the more oleic acid and saponifiable oil they contain, the more valuable they are and the better do they work. Then there is the class of hydro-carbon oils derived from paraffin shale, and American or Russian petroleum—oils which have been found of considerable service in the lubrication of machinery. These are the cheapest of all oils capable of being used for oiling wool. As mere lubricants for the wool, they are good, but, viewed from the standpoint of the woolen dyer, their use is most

unsatisfactory, for reasons which will be seen presently.

Wool oils, as they are called, are offered by oil dealers to wool manufacturers which may be blends of the four classes of oils just described, and these are sold at prices which may or may not bear some proportion to their real value.

Woolen yarns as they come from the spinning frame, or woolen fabrics as they come from the loom, are, in consequence of the oiling operation, naturally oily. Now every dyer and colorist knows that oily wool yarns and piece goods will not dye properly; the oil acts as a resist to the dye liquors, and prevents the fabrics from taking the dye as they should and moreover there is a great tendency to uneven dyeing, which is a great defect from the dyer's point of view. The grease or oil has therefore to be removed before dyeing, and this may be effected by the use of volatile solvents, such as benzol, benzine, carbon bisulphide, etc. Practically, while many attempts have been made to adopt such a process, at present probably one is not in use in the woolen mills of this country.

The next plan is to use an alkaline solvent for the oil, such as soda, potash, or ammonia, and here the idea is to convert the oils into soaps or soapy emulsions, which can be washed away with water. The easiest of all the wool oil preparations to convert into soap is oleic acid, and hence this is the easiest to remove from the wool. The next are the oleines, which contain some 50 to 70 per cent. of oleic acid, and the soap which is formed by the union of the oleic acid and the alkali helps by its emulsifying powers to remove the rest of the constituents of the oil from the wool. Oils, like olive oil, hard oil, neatsfoot oil, are more difficult to saponify with the alkali that is used; in fact, only the small proportion of free fatty acid present in these oils is changed into soap. Soda and potash have no saponifying action on the oils themselves. If these alkalies contain traces of caustic soda or caustic potash, as is often the case, then the caustic alkalies will bring about the saponification of the oil, or part of the oil in proportion to the amount present.

Ammonia has but little saponifying action on the oil. It therefore follows that there is always a risk that, when oils, like olive oil, neatsfoot oil, or lard oil are used in oiling the wool, the whole of the oil may not be removed from the wool; and strange as it may seem, the purer the oil and the better its quality the greater this risk is. Now the presence of this residue of oil left in the goods must exert some influence on the dyeing of those goods; at the least it may retard the dyeing, and hence lengthen the time required to produce a given shade. In some cases, as, for instance, in dyeing with alizarine and mordant dyes, it may have a beneficial influence on the shade. It is well known that oils do brighten these colors, and they may assist in the mordanting process by bringing about an easier decomposition of the bichromate of potash. Much depends upon whether the oil is uniformly distributed over the wool or not as to whether the dyeing is done evenly or not. The probabilities are that the oil will be distributed in patches, and hence in the event of the oil not being completely extracted, uneven dyeing is almost certain to result.

The hydro-carbon oils, or, as they are sometimes called, the mineral oils, are characterized by being unacted upon or unsaponified by alkalies, and therefore an alkaline treatment does not ensure complete removal from the wool. The removal of some of the oil is effected more by the emulsifying quality of the oil than by chemical action. Consequently, when these oils are used, scouring does not eliminate them sufficiently from the wool, and uneven dyeings are bound to result. For this reason this class of oils ought not to be used

in dyeing wool, even if they are mixed with a large proportion of oleic acid or a saponifiable oil. In this case the conditions for their full extraction are more favorable, but there is always risk that some will be left in the wool, much to the detriment of its dyeing powers.

Many, if not all, of the so-called oleines used in the wool trade contain proportions of unsaponifiable oils varying from 15 to 40 per cent., and these, of course, resist the scouring operations and remain in the wool, in which case they may, when the wool comes to be dyed, produce stains and streaks or other defects. From consideration of the facts concerning the scouring properties of wool oils, one might infer that the best oil to use would be a mixture of oleic acid, with olive oil, lard oil, or other similar saponifiable oil.—From the Dyer and Calico Printer.

Among the Mills

Co-operation is one of the guiding principles of industry to-day. It applies to newspapers as to everything else. Take a share in "The Canadian Journal of Fabrics" by contributing occasionally such items as may come to your knowledge, and receive as dividend an improved paper.

The woolen mills at Keenansville, Ont., are on the market.

A by-law granting a \$10,000 loan to the Woolen Mills, Kingsville, Ont., was carried on Jan. 4th by 216 to 19.

The Cornwall Mfg. Co.'s property at Cornwall, Ont., has been sold to the Canadian Colored Cotton Mills Co.

Reiner Bros. & Co., Wellesley, Ont., are adding some new rapid machinery in the knitting department to their factory.

The machinery for the Merchants' Rubber Co.'s new plant, at Berlin, Ont., is being installed and the factory will be running shortly.

The Peterboro, Ont., council have passed a by-law aiding the Colonial Weaving Co. by fixing their assessment at \$4,000 for ten years.

Charles Seigle has been at Carleton Place superintending the removal of machinery from the Canada Woolen Co.'s mills to the Hespeler mills.

The cold snap at Almonte, Ont., on Christmas Day stopped the Anchor Knitting Co.'s water wheel, necessitating a holiday on the day following.

The flannel business of the J. H. Wylie Company, Almonte, Ont., necessitates an increased output, and the old Baird mill is being equipped as a flannel factory.

Fire destroyed the rope warehouse of the Perth Flax and Cordage Co., at Stratford, on December 13th. The shed contained rope making machinery, as well as finished and unfinished stock.

A fire at the Dominion Cotton Mills, Hochelaga, on December 19th, did considerable damage. The fire was confined to the motor room, and much of the machinery was ruined.

Justice Davidson recently gave judgment for \$1,000 and costs against the Dominion Cotton Company in the case of Marie Louise Simard, an employee, who was injured by falling through a trap door.

The incorporators of the new Empire Carpet Company, of Dundas, are J. F. Morley, Hamilton, T. Etherington, J. H. Ellis, Kingston, and Joseph Etherington, St. Catharines, A. E. Danks, and J. F. McAllister, Toronto.

The Canadian Colored Cotton Co., Hamilton, Ont., has been compelled to divert its dye-water from the bay into the city sewers, the city solicitor holding that the company had no right to use the bay front for such a purpose.

When the wages of the mill operatives belonging to the Boyle St. Christian Church, Fall River, Mass., were cut, the pastor took \$100 off his own salary, the reduction to remain in effect as long as the operatives' wages remain cut.

The first carload of machinery for the Medicine Hat Woolen Mills Company was shipped on December 15th from Toronto. The company is putting in \$25,000 worth of machinery purchased in the East and in England. Forty hands will be employed.

The Goderich Knitting Co. are making an important change in their selling policy. After many years of successful dealing in which they have satisfactorily supplied the wholesale trade, they have decided to send their representatives direct to the retail trade.

The amalgamation of the several cotton interests of Canada, namely, the Dominion, Montreal, Canadian Colored Cotton, and Merchants, has fallen through, and it is believed that no further attempts will be made to bring about any business arrangement between the different companies.

A plan to operate a chain of cotton mills in North Carolina by tenement dwellers of New York, taken there and trained by skilled workers, is being evolved by some men interested in the cotton business. The result of the scheme will be a self-sustaining charity, taking hundreds of women and children from the dirty, over-crowded slums into a healthy country life, with cottages and schools. Work on the first mill, at Marshall, near Baltimore estate, is to begin in a week or two, and fifteen thousand spindles are expected to be working in July.

On December 21st, John Dittrick had a narrow escape from severe injury, if not death, at the Tay Knitting Mill, Perth, Ont. In making some repairs to the boiler, he had made a connection on the dome of the boiler, preparatory to adjusting the ejector, and was on top completing his work, directly over the dome, when the plug he had inserted previously, blew out and striking him in the stomach hurled him backwards. He alighted dangerously near the engine, which was running full speed, but Joseph Nixon who was present gave prompt assistance, and saved him from any further injuries.

At a meeting of the Dominion Cotton Company, on Dec. 23rd, a proposition to reduce the wages of the operatives of the company 10 per cent. was overruled, a director arguing that the Montreal mills had been closed some time last summer, owing to the break of the Chambly dam, and that it would be unfair to make a cut at this time of the year. The reason for the proposed reduction was the increased cost of raw material and inadequate protection to the product of the mills. It is thought that the reduction will be made before spring unless conditions change.

The Dominion Carpet Co.'s factory, Sherbrooke, Que., has not yet passed into the hands of a new owner, although the date set for the receiving of bids for its purchase has passed. None of the bids received reached the figure expected. Fred. Talbot, formerly manager of the Dominion Brussels Carpet Co., is organizing a company to purchase and carry on the business. Conditional upon his success, he has made the city an offer of \$35,000 for the property, this sum being made up of \$7,500 for the corset factory building, \$20,000 for the carpet factory buildings, \$1,500 for the old Jenckes property, and \$6,000 for machinery.

E. H. Pauley is in England in connection with the erecting of machinery for the projected linen mill at Orillia.

At Magog, and other places in the Eastern Townships, it has been necessary to close down the mills for lack of water.

On December 24th, the employees of the carding department of the Imperial Cotton Company, Hamilton, Ont., presented their overseer, John Brown, with an ebony set and an address.

Wm. Thoburn, head of the Thoburn woolen mills, has been elected Mayor of Almonte, and H. Stroud, formerly proprietor of the Paris carpet mills, has been elected Mayor of Paris, Ont.

The fixers and weavers of the weaving department of the Stormont mill have presented Robert Keenan, the overseer, with a handsome gold chain and locket as a token of the esteem in which he is held.

The Rosamond Woolen Co., Almonte, Ont., are affected by the low water, and have been using their auxiliary steam power. On January 4th an accident to the engine compelled a close down until a new part could be got from Galt.

Samuel Brown, foreman of the card room at the Waterloo Woolen Mills, for some years, and who has accepted a similar position in the Auburn Woolen Mills, Peterboro, Ont., was presented by the employees with a gold-headed umbrella and an address.

The body of August Fleider, one of the German colony which immigrated to Hespeler this summer to work in the woolen mills, has been found in a gravel pit near the town, where he had shot himself, owing, it is believed, to the fact that a young woman of his nationality had repulsed his advances.

The recent fire in the premises of the Toronto Woolen Machinery Co. did not damage the machine shop, and there was no interruption to the work. The French shoddy picker brought out by this company, has proved very successful, ten of the machines having been sold in Canada already. A new improvement on the machine is now being patented.

At the Richelieu Woolen Mills, Chambly Canton, Que., on December 23rd, Thomas Hope, the manager, on behalf of the overseers and himself, presented the proprietor, S. T. Willett, with a gold-headed cane, suitably inscribed. Mr. Willett, who has been for many years Mayor of the village, and member of the council, has other business interests apart from the mills, and although seventy-nine years of age, would put many a young man to shame by his energy and activity.

The Toronto Evening News, in a recent special sketch of the industries of Galt, thus refers to the C. Turnbull Co.: The woolen industry has been one of the largest manufacturing enterprises of the Dominion and in this industry Galt has long occupied an honored place. For years the C. Turnbull Co., Limited, of Galt, has enjoyed a splendid reputation throughout Canada, and it is one of the leading knitting establishments of the Dominion, employing at the present time 150 hands. This well-known firm was originally commenced in 1859 by the late Robert Turnbull and John Deans, but since 1872 it has been in the hands of the Turnbull family, Mr. Charles Turnbull being the present manager. The company makes all kinds of men's, women's, girls', youths' and infants' underwear, both elastic and ribbed, on the full fashioning machines, or the Scotch system. They have now reached a stage in their development in which they have perfected a process which makes the finest of all wool goods absolutely unshrinkable, which they guarantee when stamped with their mark "Ceete." In ribbed underwear they make

babys' vests of the smallest description, and up to any size required, from the finest and softest of woolsens. They also manufacture vests, drawers, union suits, golf jackets and anti grippe bands. The bulk of the wool used is Australian.

Fabric Items

The blanket factory of Adams Bros., Toronto, was damaged by fire to the extent of \$5,000, on December 28th.

On December 13th, fire destroyed Vineberg & Co.'s clothing house, recently removed to Owen Sound, Ont., from the Soo.

J. Urquhart, of the Humphrey Clothing Co., Moncton, N.B., has won first honors for designs of gentlemen's clothing in a contest that has been recently carried on in the United States.

A strike occurred at the clothing factory of the Wyld Darling Co., Toronto, last month, owing to the refusal of the firm to allow the men to start work at 8 a.m. instead of 7. The men returned under the old conditions.

John W. Peck & Co., Montreal, are erecting a new clothing factory, which will be the largest establishment of the kind in Canada. When ready, which will be in April next, all the manufacturing departments will be concentrated in one building.

The Militia Department has placed contracts with the Sanford Manufacturing Company, Hamilton, and Mark, Workman & Co., Montreal, for the supply of a reserved stock of military clothing. This will be kept on hand for use in the event of the militia being called on for active service.

Barring the inhabitants of the earth who wear practically no clothes at all, the costume of the average Russian costs the least. Ten rubles, or about \$7.50 will clothe a male citizen of the Czar's realm, while the woman's costume will cost less than \$2. The man's costume consists of coarse cotton trousers, tucked into boots of half-dressed leather, a cotton shirt, and a sheepskin coat. A coarse Camlet caffen bound around with a sash completes the dress. The women wear a sarafan, or long petticoat, which is held up by straps running over the shoulders, a chemise with sleeves to the elbow, a kerchief over the head, and a pair of shoes. Stockings are sometimes worn, but more frequently the legs and feet are bound with strips of cotton or linen cloth. For outdoor wear a quilted jacket or long cloak is added. The simplicity and cheapness of the dress is not due to any lack of vanity, but to the poor circumstances under which the majority of the Russians live.

The result of the King and Queen shopping at the Irish Industries Exhibition, recently held at Windsor, has been the creation of several new fashions. Quite a stream of people, indeed, is constantly passing into the association's depot in Motcomb St., Belgrave, and many are the requests for articles "similar to those bought by the King and Queen." This is especially the case with the Caledon and Foxford tweeds, of which the King bought enough to make several suits, and the Queen purchased several dress lengths. So popular have their Majesties already made these tweeds that several well known tailoring firms have applied to the association for quantities of the material. Private purchasers are searching in their questions as to the exact shade bought by the Queen. Another vogue, born of the Royal shopping, is the demand for Newtonards scarfs, of which Lady Londonderry sold several to the Queen. It has not taken long to discover that there is no better protection for the heads, hats, and faces of lady motorists than these wrappings.

The Dominion Bag Co.'s factory, Montreal, was damaged by fire on December 29th, to the extent of \$4,000.

Oak Hall, the well-known clothing house, Toronto, issued a very handsome pictorial wall calendar, in two designs; also a useful pocket calendar and memorandum pad in a celluloid case.

At the annual meeting of the Wholesale Dry Goods Section of the Montreal Board of Trade, the following officers for 1904 were elected: President, G. B. Fraser; vice-president, A. S. Robertson; treasurer, R. Henderson; directors, R. A. Brock, R. W. MacDougall, A. Racine, and R. N. Smythe. H. Gault was chosen nominee for election to the Council of the Board of Trade.

An international exhibition of textiles, having special reference to articles of dress and clothing, is to be held at the Crystal Palace, London, Eng., next March. Worth and other well known houses will have their exhibits of fashionable spring creations. The director of the exhibitions department of the Crystal Palace recently spent some time on the Continent, and he reports that foreign firms are very enthusiastic over this idea. The exhibition is under the patronage of, among others, Princess Christian, and Princess Henry of Battenberg.

A special correspondent of the London Times, who has been investigating the conditions of labor in German factories, and has visited many of the principal cities, reports the shortest week in his list is 57½ hours, and the longest 62, both in textile mills. The normal German working day is 10 hours and the normal week 60 hours. The hours in Germany average about one a day more than in England, and about one a day less than in the United States. A difference between the United States and the two other countries, is the number and length of the meal intervals allowed. As a rule, in the United States the only interval allowed is for dinner, and that is generally no more than three-quarters of an hour or half an hour. The meal intervals, he adds, are more liberal in Germany than in England; an hour and a half being allowed for dinner instead of an hour, and there is afternoon tea—or rather afternoon coffee—as well. This deliberateness and respect for meals, he thinks, is as characteristic of Germany as indifference to them and hurry are of the United States.

Personal

M. J. Smith, the New York representative of O. Molina & Co., of Merida, Yucatan, the largest sisal hemp exporters in the world, is visiting cordage factories in Ontario.

Wm. Smith, many years superintendent of the Rosamond Woolen Mills, Almonte, has resigned that position, to become vice-president of the Enterprise Hosiery and Underwear Co., Toronto Junction, Ont.

Hon. J. L. Forget, who has been serving as vice-president and chief executive officer of the Dominion Cotton Company, since the death of Mr. Gault, is now president, and A. B. Mole, the general manager, is a director.

Charles Raymond, the founder of the Raymond Sewing Machine Works, Guelph, Ont., died on January 4th. Deceased was 79 years of age, and established the business in Guelph in 1864. He was the inventor of several contrivances, and retired six years ago from the presidency of the company.

Louis Shindhelm, of London, Eng., a traveller for Frank Woodward & Co. Limited, lace manufacturers, Nottingham, England, met with a sudden and shocking death at the

Falls of Montmorency, Que., on December 8th. He fell while sliding and dashed his brains out.

J. A. Watts, Canadian representative of T. G. Hawkes & Co., the Davis Textile Company, and the Pantasote Company, after an absence of twenty years, has returned to Hamilton, Ont., to promote the interests of these American enterprises.

Business Notes

Notice is given that the Brandon Binder Twine Company intend to apply for supplementary letters patent to increase the capital stock of the company from \$100,000 to \$200,000.

A firm of carpet manufacturers in the Midlands intend to commence manufacturing in Canada. They will invest £10,000, and will employ 100 hands in the manufacture of tapestry and velvet carpets.

The Singer Manufacturing Co. will move their Canadian factory from Montreal to St. John's, Que. The town has offered a free site containing 35 acres, and exemption from taxation for 35 years. The transfer will mean the loss to Montreal of an industry employing 275 people. The new factory will be three times the capacity of the present works, and will also include a plant for manufacturing the company's cabinet work, in place of the existing one located at Woodstock, Ont.

The International Flax Fibre Co., of New York, with a capital of \$1,500,000, propose coming to Canada to secure land for the cultivation of flax, and transform it into fibre and tow by the method patented by G. R. de Montlord, president and general manager of the company. They will manufacture yarns and linen in Canada, as well as all the by-products of the flax, etc. Canadians named on the board of directors are N. A. Belcourt, K.C., M.P., Ottawa; and Joseph Archambault, L'Epiphanie, and St. Henri de Mascouche, Que.

THE NEW RULING OF THE GERMAN SURTAX.

There is a diversity of opinion among textile manufacturers regarding the new customs ruling on the German surtax, referred to last month. Many manufacturers are satisfied but the official mouthpiece of the tie makers describes it as a farce, as it abolishes the anomaly created by a clash between the British preference and the German surtax, in articles containing 50 to 75 per cent. of German value. By the preferential tariff such articles enter Canada under the preference. Under the new ruling, Canadian manufacturers pay the full nominal tariff, and one-third additional on the German raw material employed, while the importers pay only two-thirds of the normal tariff. The Canadian manufacturer may, therefore, pay more duty on his raw material than the importer on his finished product. For example, an article laid down in Montreal for \$1 containing 70 cents of German value and 30 cents of English, is still subject to the preference, and if rated at 35 per cent., pays only 23 1-3 cents. The manufacturer, importing the 70 cents value for further treatment in Canada, has to pay more than this sum for ordinary and surtax duty. There are few articles containing these proportions of German and British value, but among them are silk neckties and yarn hosiery. The tie manufacturers especially raise an outcry against the new ruling. A manufacturer, commenting upon the situation, complains further that English shippers in their estimates cut off an

allowance for profit on the German portion, and exaggerated the profit on the English. He also states that manufacturers are largely replacing German silk with Austrian and Swiss goods.

ENGLISH COTTON SPINNERS AND FUTURES.

The principal cotton spinners of Lancashire will confer at Manchester on January 14th, to discuss the following scheme to abolish dealing in "futures:"

First—By abolishing dealings in futures entirely. (a) By the spinners in this and other countries absolutely refusing henceforward to buy and sell futures, always buying outright. (b) If possible by the action of the Government of the United States and Great Britain.

Second—By the discontinuance of the future business, which can only be made effective by increasing the facilities of the spinners in getting in closer touch with the planters and the factories in cotton States.

Third—By spinners holding stocks at the mills throughout the year which shall never be less than a three months' supply.

Fourth—By the spinners and manufacturers refusing contracts at losing prices on actual cotton yarn that can be bought on the day stated.

FLAX, HEMP AND JUTE BLEACHING.

All the various bleaching processes applied to the several fibres, of which flax is a type, may be regarded as based upon the cotton bleaching process as carried out with bleaching powder. In regard to flax, however, a slight modification of the process is introduced in the form of motion being given to the fibres while actually in the bleach bath. In the first place, before any bleaching can be done, it is necessary to subject the fibre stock to the action of boiling soda or lime, to remove as much as possible the various impurities always present, and then proceed with the chlorine liquors. The one important point to observe in flax bleaching is the ready action that the bleach liquors have upon the fibres, and unless care is taken to have these sufficiently weak, the batch will be "burned" and rendered unfit for further use. The natural coloring matter of flax is very peculiar in that it is not actually destroyed by the bleach liquors, but is made quite soluble, and in this condition is readily removed by an alkaline wash. One application of the bleach liquor will not yield the result desired; it is necessary to repeat the bleaching liquor treatment several times, alternating with the alkaline wash. The bleaching of linen fabrics is a special branch of textile work, requiring long experience and special local conditions which are essential for the very best results. Closely related to flax bleaching is the bleaching of jute, but up to the present no entirely successful method has been devised that will yield a perfect bleach and at the same time leave the fibres with their original strength. Bleaching powder is not available for this fibre, and in consequence the sulphites, bisulphites, permanganates, etc., must be used. Unlike flax, jute will not stand much alkaline treatment, so that mild alkaline salts must be employed, for instance—borax. Hemp may be bleached with bleaching powder, but its natural color resists a number of successive treatments, so that it is not a profitable undertaking. The entire problem of bleaching these fibres is one of great technical importance, for if commercially practical processes could be obtained, it would mean a marked extension of the fields of usefulness

now occupied by these fibres. Any process devised must so do its work as not to impair the strength of the fibre substance.—Textile World Record.

DYEING WOOLEN GOODS CONTAINING SILK EFFECT THREADS.

Among new color samples, issued by the Cassella Color Co., New York and Montreal, are samples of dyeings from Azo Wool Blue C, (patented), a new dye-stuff belonging to the class of level-dyeing of woollen goods containing silk effect threads. While cotton, artificial silk and China-grass in woollen piece goods dyed with Azo Wool Blue B, C, and SE are left white, the C brand possesses the extremely valuable property of leaving also silk threads in light and medium shades absolutely untinted, and in deep shades, only slightly tinting them. Azo Wool Blue C is best dyed on goods containing silk with the addition of 10 per cent. Glauber's salt and 10 per cent. acetic acid, and in order to obtain clear effects, the dye-bath should be kept boiling as hard as possible, if necessary by employing a second steam-coil. The goods are entered directly into the boiling bath, boiled for about one hour, rinsed and brightened in a weak acid bath. If, in the case of dark shades, the silk should become tinted more than is desirable, the goods are stripped in a fresh bath of 140 to 175 deg. F., to which one-half to one ounce oxalate of ammonia per ten gallons of liquor have been added, according to the hardness of the water, and treated for ten to twenty minutes until the silk is sufficiently clear. Dyeings of Azo Wool Blue C may be discharged white both with zinc dust and tin crystals; this dye-stuff is thus also of great interest for producing discharge styles on woollen goods (pieces and yarns), wool plush, etc., both for blue shades and in combination with suitable yellow, orange and red dye-stuffs for producing compound shades of all kinds. Azo Wool Blue C dyes very level and is dyed like all other easily leveling dye-stuffs, with the addition of Glauber's salt and bisulphate of soda, or Glauber's salt alone, unless the goods to be dyed contain silk effect threads which are to remain white, when the previously described dyeing method should be applied. Care must be taken that the goods are thoroughly rinsed after dyeing or discharging.

EXPERIMENTS WITH PLANTAIN FIBRE IN TRAVANCORE.

The Indian Textile Journal gives the following extracts from a report by K. Narayana Iyer, superintendent of the School of Arts, Trevandrum:

"The establishment of a weaving branch was sanctioned for this institution from April, 1902, as a tentative measure for a term of one year, for testing the commercial value of plantain and other fibres, and a qualified master was appointed on 40 Rupees per mensem, on probation, who was expected to use the technical knowledge he has acquired in such other branches of industry as might further the objects of the institution.

"Sometime before the above date fibre extracted from plantains grown in the country was procured by Government from the Forest Department, and supplied with a view to ascertain its fitness for weaving purposes. Experiments were made on a very small scale, and a few square inches were woven, and different fast colors were tried successfully. The extraction of the fibre is itself found a simple process, the plantain trees of different varieties are already grown in

abundance in the country and for textile purposes, the edible, and, therefore, the valuable portion of the trees is not affected, as the fibre has only to be extracted from the sheaths which are at present simply wasted. These circumstances led to the advisability of trying the plantain fibre at first with the help of the new weaving establishment above referred to.

Results of the Experiments.

The results of the experiments made during the year under reference with regard to the extraction of plantain fibre and weaving cloths with it are submitted below.

(a) Twenty-nine varieties of plantains ordinarily found grown locally were tried, and twelve of them were found to yield the best fibre for weaving cloths of fine texture, and the remaining ones fit only for coarse weaving and cordage. The fibres extracted were silky in color and gloss, and sufficiently strong for weft thread.

(b) A few native and tanning colors were tried, and found successful in dyeing the fibre fast.

(c) Washing with alkali commonly practised by native washermen with soda and soap, were tried in the fibre and the fabric woven with it. These were found only to increase the strength and pliability of the material.

(d) The fibre was found to possess peculiar advantages over other known varieties of fibres used for textile purposes. It possesses almost an exact resemblance to silk in the polish of the thread, which it is found to retain even after it is dyed with any color or boiled or washed. This fibre needs no spinning operation like other fibres. It is ready for the loom soon after its extraction from the raw sheaths of the plantain trees.

(e) For weaving purposes, the required fibre of uniform thickness was sorted after extraction, knotted, reeled, and wound into cops. It was then ready for the shuttle. For reeling and bobbin-winding, the required hand machines were made and supplied by the carpenters employed in the school.

(f) Weaving was first tried in an ordinary country loom, and some difficulties were experienced in the warp thread which broke here and there by the pressure applied to the treadle in forming the shed. For weft-thread the fibre was found to be very satisfactory. The fibre being slightly beaten before weaving with a polished wooden mallet acquired more polish and pliability and became flat instead of round. Thus it gained an additional advantage as the cloth woven with it became finer and closer in texture.

(g) The breakage in the warp-thread, experienced in the country loom, was partly due to the defects in the loom itself. Another hand loom of the improved pattern made in the school was used afterwards for weaving with the fibre, and even there the warp-threads showed signs of breaking at much pressure, though much less than while used in the country loom. In both of these looms keeping the warp cool by wetting it with water greatly tended to stop the breakage of the fibre. In the latter loom, no doubt, there was nothing to complain of the defects of machinery. Thus on the whole, it is evident, that the room in which the loom is set up being invariably hot, the fibre is to some extent at least affected by the heat. The ceiling of the rooms in the weaving establishments even for all other fabrics appears to be particularly attended to with a view to keep the warp cool. The fibre itself was hitherto tried for the warp just as for the weft without any special preparation after its extraction. There are thus still chances of using the fibre, both for weft and warp, if further experiments in the above direction are found successful.

(h) Under the circumstances stated in the above paragraph, weaving was commenced in the new loom with the ad-

mixture of cotton for warp-thread. The fibre used for weft answered the purpose very well, and the fabric thus woven produced very good stuff on the whole. It retained the silky gloss, fine texture and strength. So far, therefore, as its utility for wear like cotton cloth was concerned, it was no doubt a great success. The cost, as shown in the latter part of the report, does not exceed that of similar cotton fabric. Not less than half the material in any woven fabric is generally found in the weft, and this being now occupied by plantain fibre, which is simply wasted in the country there is a tangible benefit to the public, as well as to the weaving class by the introduction of this fibre in weaving. To the former, for the same price as cotton stuff, a finer and silky substitute is obtained, and for the latter the fibre is obtained cheaper for work than cotton thread. The fibre is very light and cotton thread is three times heavier. Therefore 1 oz. of fibre is sufficient to cover an area for which 3 oz. of cotton thread are required. One oz. of fibre costs 1½ annas, and three oz. of cotton costs 4½ annas.

Besides, the fabrics thus woven in the latter part of the year under report is found particularly useful for native turbans as the fibre is lighter and glossy. Another additional advantage is that when tied as turban, it is easy to keep it pulled up to any size without getting loose. Thus less than ordinary size required for the cloth will answer for the purpose with the said special advantage. The turbans with and without coloring are sufficiently attractive.

(i) With further trials if for both weft and warp, plantain fibre is used, the fabrics thus produced will entirely give a new aspect. It will be considered by Hindus sufficiently holy to make a cheap and permanent substitute for ordinary silk, and no comparison will be attempted by purchaser with its cost and that of cotton. There is yet hope that sooner or later this success may be attained. Further Manilla hemp, or what is locally known as mala-vazha, will certainly answer the purpose of warp-thread. This variety of plantain is likely to grow well in the country, and even at present it is not entirely a strange one. Thus by introduction partly of Manilla hemp for warp-thread alone, even at the last resort, the advantages now found in the use of plantain fibre for weaving will not be any way diminished.

(j) Thick fibre obtained from the plantain trees will be found useful for the manufacture of fabrics for thick garments, curtains, carpets, etc., (one small carpet was made and sent to the Delhi Exhibition). All varieties of plantain fibre are likely to make a good, if not better, substitute for cotton thread for lace work and embroidery. In fact, the fibre may find useful trial in all directions in which cotton, silk and other fibres are utilized.



LITERARY NOTES.

The programme of the Canadian Magazine for 1904 is an attractive one. One of the historical features will be a sketch in twelve chapters of the war between France and England from 1750 to 1763. This is by the historian, A. G. Bradley, and the first instalment under the title of the "Fight for North America," appears in the January number. It gives promise of being a valuable contribution to Canadian history. The following are announced as being among other features of purely Canadian interest this year: T. G. Marquis will discuss "Lord Elgin," Martin J. Griffin will write of "Lord Chatham and the American Revolution," "The Building of a Railway," by Hopkins J. Moorhouse, illustrated; "The Teaching of History," by W. L. Grant; "The Indeter-

minute Sentence" for criminals, by J. J. Kelso; "Taxation of Franchises," by Alan C. Thompson; "Soil Utilization" by E. Stewart, and other articles of a like character will appear with the usual regularity. Professor Cappon will write a special article on the poetry of Charles G. D. Roberts, and there will be other articles dealing with Canadian literature. One of the Canadian teachers sent to South Africa will tell her experiences in a sketch called "A Year in a Boer School."

The Canadian Almanac for 1904 is an excellent issue and ranks as the Canadian Whitaker and Statesman's Year Book. The commercial information, such as the tariffs (including the preferential tariff and the French treaty), tables of weights and measures, lists of banks, etc., are very full, while the political information is more extensive than ever. The astronomical and meteorological information, which has for years been a special feature of this almanac is well maintained, and this issue has a well printed condensed map of the Dominion.

The New Bedford Textile School, of New Bedford, Mass., has issued a catalogue giving information of the different departments which include the teaching of carding and spinning, chemistry and dyeing, designing, knitting, warp preparation and weaving, handloom work, drafting, mechanics and engineering, with an instructor for each department. It was founded and is still subsidized by the State. Last year it graduated nearly 100 students.



THE DUMPING PROCESS IN TEXTILES.

A well known manufacturer of Taunton, Somerset, recently gave some startling facts concerning the present condition of the shirt and collar industry as a result of American competition:

"When American blouses were introduced over here four years ago, they were sold at prices below what we could possibly produce them for. In the second year of the invasion, the Americans secured £50,000 worth of orders.

"For nearly ten years we made a point of trying to keep our work-people going during the quiet interval between seasons, with the result that we always had a heavy stock of job stuff to begin the season with.

"By having to sell this job stuff in the home markets—often below cost price—we displaced goods on which we should have obtained a profit.

"The Americans cleared out their surplus stock here, showing patterns and styles which, although sold in the United States the previous season, were new on this side.

"When goods are imported in this fitful manner it upsets home trade terribly, as for one or two years our labor is displaced to the extent of these importations, and we consequently lose many of our skilled workmen, who go to other occupations. When the home market becomes normal, we have to seek new hands and teach them the business.

"On one occasion the Americans sent over £50,000 worth of blouses. They averaged perhaps 30s. per dozen, which meant over 30,000 dozen and the loss to British workers—taken at the low price of 8s. a dozen—was over £12,000. Three hundred workers were displaced for twelve months at an average weekly wage of 16s.



FINISHING WOOLEN GOODS.

United States Consul Day, Bradford, Eng., writes to the State Department that he has received numerous enquiries from the United States manufacturers asking for details as to how the permanency of finish in textile fabrics, in which

Bradford finishers excel, is to be obtained. Naturally, he writes, the utmost reticence is observed in imparting information. Incidentally, he adds, it is now possible to finish both woollens and worsteds in such a way that the finish is not affected by the tailor's hot iron. The best information obtainable is that a German machine is used to obtain this finish. It seems that the finish is obtained by forcing dry steam through the fabric. This is done before the goods are pressed, and all subsequent operations seem to have little or no effect in destroying the conditions created by this finishing process. Several of the very best finishers in Bradford, Consul Day states, are using this machine. The principal object of another foreign invention for finishing and pressing cloth, is to bring the finishing surfaces into contact with the cloth very rapidly, so that the finishing may begin as near to the forward end of the cloth as possible, and be continued practically up to the rear end of the piece. The full pressure is applied throughout all the time, and any waste of cloth is prevented. The machine is so constructed that pressure remains uniform during the finishing of the piece while under treatment. The rollers can be readily adjusted and examined as may be necessary, and they can be driven either positively or by frictional contact with each other so as to ensure that during the process the superficial speed of all rollers is the same for each piece.—The American Wool and Cotton Reporter.



RECENT DEVELOPMENTS IN COLORING MATTERS.

FROM A LECTURE BY PROF. OTTO N. WITT, BERLIN

The lecturer explained, with the aid of some striking experiments, that in order to become a dyestuff a substance must not only be so intensely colored that it could communicate its own shade to colorless substance holding it in solution, it must not only be soluble in water or other liquid suitable for preparing a dyebath, but it must also be soluble, and even much more soluble than in water, in the colloid which formed the substance of the textile fibre.

The finished dyed fabric was nothing more or less than a solid solution of the dyestuff in the substance of the fibre, unless there was secondary chemical influences, such as that of the mordants, at work which changed the solution into a suspension by precipitating the dyestuff after its immigration into the fibre.

This peculiar combination of solubilities was rare in colored substances of an inorganic nature, and in the vast domain of organic substances of the aliphatic series few dyestuffs were met with, but in the aromatic series, where the power of selective absorption of light was very frequent, it would be curious if they were not of common occurrence.

Since the physical properties of every compound were direct functions of its molecular constitution, it was easy to believe that this peculiar combination of solubilities would be the result of certain general conditions fulfilled in many members of the aromatic group, and the theory he proposed twenty-five years ago was simply an attempt to discover those conditions by investigating the constitutional peculiarities of all those dyestuffs whose constitution was known in those days.

In the molecule of every coloring matter whose constitution was known, certain atomic constellations had been observed, which seemed to be essential, and of which two must always be present—chromophores and auxochromic groups. Of the former some two dozen were known, all agreeing in the fact that they could not exert their influence except in the presence of the auxochromic groups, of which very few were known.

There must exist a law that governed the formation of chromophoric groups but so far it had not been definitely established, though some progress had been made towards doing so. Our knowledge of the chemical causes of the physical properties of coloring matters was continuously developing, and quite lately some definite views had been formed about the connection of the chemical constitution of the aromatic bodies with that form of selective absorption of light brown as fluorescence.

Much work had been done on the constitution of the azo colors, the introduction of which was the direct result of early efforts to conduct the search for new coloring matters on definite scientific principles. The number of the dyestuffs of this class that might be prepared was extraordinary, and it had been computed that 3,159,000 different ones were at present easily accessible. Of these at least 25,000 formed the subject of patents in Germany and other countries, while over 500 were manufactured on the larger scale.

Azo dyestuffs could be produced at will to dye wool or silk or cotton, to dye slowly or quickly, and to stand soap, or acid, or alkali; and this possibility of adjusting their properties with almost mechanical precision had been the cause of the greatest successes of the color industry. But while this field bore its rich harvest, others were by no means neglected, though perhaps the greatest and most brilliant success of the chemistry or dyestuffs had been the industrial synthesis of indigo.

The study of these dyestuffs had become a domain of chemistry unsurpassed for variety and fascination; it taught a lesson even to those who were apt to look upon science as a pastime for those who lacked ability for practical life, for they could not help seeing that in this instance the most intricate science had led to something eminently practical and valuable.



FLAX-GROWING IN MANITOBA.

A Paying Crop.—Mr. Christie, the special commissioner of the Dundee Courier to Canada, in the course of a letter to that paper, says: "Flax-growing in Manitoba and the provinces is increasing yearly, and farmers find it is a good paying crop, the total acreage under cultivation in Manitoba this year being 56,000 acres. Too little attention, however, is paid to the proper cultivation of it, and, were more care taken in preparing the ground for the seed, and in using the very best of seed, much better results would follow. The preparation of the soil is most important, and it should be ploughed in the autumn and sown in the beginning of June, the quantity of seed used being from 40 to 50 lbs. per acre. It should be sown shallow, and at a depth of not more than one-half to three-quarters inches. If this treatment is carried out, a remunerative crop of from 16 to 22 bushels will be secured. The finest flax seed in the world is grown in Manitoba, and realizes from \$1.10 to \$1.50 per bushel. Many farmers take a crop of flax after the first breaking of the land and before it is ready for wheat sowing. Others, again, sow it on any piece of spare land they have after the wheat, barley, and oats are sown, and consequently sometimes it is seeded too late in the season, and does not ripen properly before the cold weather sets in. It

is then cut by the ordinary binder, and a poor return of seed is the result, it being in so many cases only fit to be used for feeding cattle and horses.

"The Fibre Industry.—With regard to the fibre industry, it has been proved, after many years' trials and experiments, to be unsuccessful, owing to climatic influences. The straw is very rough, and, after being soaked in water, it dries so quickly that it breaks away. Besides, labor is not plentiful enough to devote to it at the time when other work demands attention, and when time is to be lost the cold weather is on, and renders the operation unworkable. No mechanical appliance has as yet been devised to overcome these difficulties but should such be invented in a way that would render it to be profitable and inexpensive, a new field of industry and wealth would be opened up for the farmers in this vast country."



HINTS ON SCOURING WOOLEN GOODS.

As there is a great difference in woolen goods, there is also a difference in the proper treatment of the various kinds of goods in the scouring process; for instance, a pure all-wool fabric does not require as severe a scouring as low grade goods, providing the wool was handled right. From time to time goods shipped to market have a very bad odor, and in most cases this trouble is the hardest feature to overcome; that is, the goods may look bright and nice, handle fairly well, but will have this bad odor; while, on the other hand, goods may have no bad odor, but may be stiff with dirt, cloudy, streaky, blotchy, rusty, or stained. The former trouble is caused by the oil not having been entirely taken from the goods in fulling or scouring, or it may be caused from the soap if the grease or fat used in making the soap has not been properly saponified. The only thing to do to overcome this difficulty is to increase the alkali. This can be done in different ways, either by adding more alkali to the soap when making it up for use, or by keeping an alkali solution on hand and apply it separately to the goods or mix it with the soap as you use it. The soap should be thoroughly cooked; some grades require far more cooking than others, but if you cook it until it strings it will be sufficient. Never give goods an alkali bath after soaping, as it will make them harsh and crisp; either put the alkali on with the soap or else give the goods a 3 or 4 per cent. bath before soaping; half the quantity of soap will do the work and the goods will not feel so harsh when finished. Be sure to give the goods a thorough rinsing in warm water. Remember, I only recommend this way of scouring when one is up against this bad odor. One will have to use his judgment as to the amount of alkali to be used.—Fester in Fibre and Fabric.



—New color samples have been received from L. Cassella & Co., of Anthracene Chrome colors on carbonized shoddy. Illustrations are given of various Anthracene Chrome colors on carbonized shoddy. The wool waste, which has not been freed from acid is dyed with the only addition of 10 to 20 per cent. Glauber's salt crystals, entering at 120 to 175 deg. F., and boiling for one hour. Then the bath is cooled off somewhat, and the requisite quantities of bichromate of potash added, after which the material is worked at the boil from one-half to one hour.

WANTED

—To Lease or Buy A SMALL WOOLEN MILL, of One or Two Sets, in Ontario. Plant must be Equipped for Making Yarn, and in good condition. One having a Water Power preferred. — Address, "F. S. J.," care Canadian Journal of Fabrics, Montreal.

C. E. RILEY & CO'Y.

281-285 Congress Street, Boston, Mass.

Builders and Importers of COTTON, WOOLEN, WORSTED **MACHINERY**

**CARD CLOTHING, EMERY FILLET, EGYPTIAN COTTON,
SPINDLES, FLYERS, FLUTED AND SHELL ROLLS, GRINDING ROLLS, &c.**

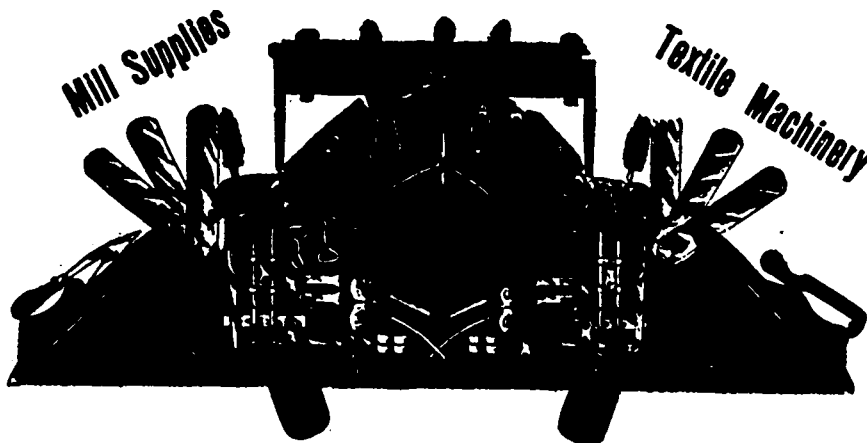
Sole Agents for
Hamilton Cotton Co.'s
Beam Warps, Mule
Ropes and Spindle
Bandings.

Samuel Law & Sons
H. & T. Steel English
Card Clothing.

Francis Willey & Co.
Bradford, Eng.
Wools, Tops, Noils.

English Leather
Belting.

GEORGE REID & COMPANY, WOOL



J. Smith
Woolen Machinery Co.
PHILADELPHIA.
Carding, Spinning,
Pickering Machinery.

Crompton & Knowles
Loom Works.
Looms for weaving
every description of
Fabric.

Prince, Smith & Son
KINGLEV, ENG.
Worsted Spinning
Machinery.

Office—11 & 13 Front E.
Warerooms—138 Esplanade E.
(Foot of Jarvis St.)

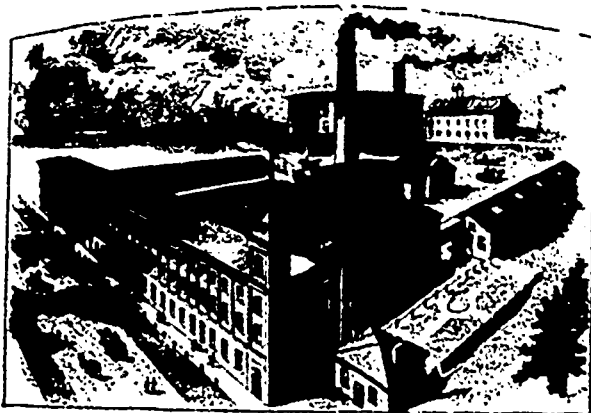
TORONTO

Telephone, Main 3591
Night call, North 2561

Hamilton Cotton Co., Hamilton

MANUFACTURERS OF

White and Colored Yarns, Single or Double, Hosiery Yarns
of all descriptions, Warps, Twines, white or colored.
Webbings & Bindings in great variety, Lampwicks, etc.



SELLING AGENTS

WM. H. STEWART, 18 Front St. East, Toronto.

Agent for Warps: **GEO. REID, 11 & 13 Front St. E. TORONTO.**

THE NEW

French Shoddy Picker Machine

SUPERIOR TO ALL OTHERS.

High Test Awarded at Paris Exposition, 1900.

OF SILK, WOOL, COTTON, WASTE, JUTE, etc., it will
produce fifty per cent. more production than the Garnett
Machine on one-half the power.—Has no rival on the market.

Toronto Woollen Machinery Company

118 DUKE STREET, TORONTO.

L. BREDANNAZ, Manager.

Sole Agents for Canada and the United States.

Prices on Application.

Prices on Application

INSECT DYES.

Cochineal is the source of artists' carmine and carmine lake, while, when precipitated with a salt of tin, it also yields a splendid scarlet. The cochineal insect, of which the female, like that of the nearly allied lac insect, alone yields the dye, is originally a native of Mexico, where it is parasitic on the leaves of the prickly pear. The males of the coccus cacti, as the species is called, are minute insects furnished with well-developed wings, feathered antennae and a long pair of hair-like processes at the hinder extremity of the body. On the other hand, the female is a repulsive looking, wingless creature, with very short posterior hairs and nearly double the size of her partner. These insects adhere tightly to the smooth surface of the fleshy leaves of the prickly pear and are not unlike purple wood lice in general appearance.

When the harvest time has arrived the cultivators stretch out on the ground pieces of linen at the foot of the plants, and detach the cochineals from them, brushing the plants with a rather hard brush or scraping them off with a blunt knife. If the season be favorable the operation may be repeated three times in the course of a year on the same plantation. The insects thus collected are killed by dipping into boiling water, by being put into an oven, or by being placed on a plate of hot iron. When withdrawn from the boiling water they are faced on strainers in an airy position, first in the sun and afterward in the shade. In commerce three sets of cochineal are recognized: first, the masticque, of a reddish color, with a more or less abundant glaucous powder; second, the noir, and third the sylvestre, which is smaller and of a reddish color. This last description, which is gathered from wild cacti, is the most highly esteemed of all. Each year there are imported into France 200,000 kilogrammes of cochineal insects, which represent a value of 3,000,000 francs, \$600,000.

The cochineal trade is chiefly in the hands of the Spanish and the French. By the latter Government these insects have been successfully introduced into Algeria, where they yield a large revenue. About the middle of the last century, the Government was accustomed to purchase the entire harvest at the rate of 15 francs the kilogramme. At the still earlier date they were introduced into the Canaries, where they also became well established, but the attempts to acclimatize them in Corsica and the south of France resulted in failure.

The Ontario Button Co., Waterloo, Ont., are moving to larger premises.

* * *

—The Belgian cotton spinners find themselves in the same boat with the British and German cotton spinners, owing to the shortage of raw cotton, and now the policy of growing cotton in the Congo Free State, which is under control of the King of the Belgians, is being advocated as a means of safeguarding their future supply.

* * *

CHEMICALS AND DYESTUFFS.

The demand for chemicals and dyestuffs during the last month has been very small, which was only natural at this time of the year, owing to stock-taking. Prices remain firm on all lines, and nothing new of interest to report:

Bleaching powder	\$ 1 60 to \$ 1 80
Bicarb. soda	1 75 to 2 00
Sal. soda	0 80 to 1 00
Carbolic acid, 1 lb. bottles	0 35 to 0 40
Caustic soda, 60°	2 10 to 2 25
Caustic soda, 70°	2 35 to 2 50
Chlorate of potash	0 09 to 0 10
Alum	1 35 to 1 50
Copperas	0 65 to 0 75
Sulphur flour	1 60 to 1 70
Sulphur rock	1 75 to 1 80
Sulphate of copper	0 06 to 0 06 1/2
White sugar of lead	0 07 to 0 08
Sumac, Sicily, per ton	57 50 to 58 00
Bich. potash	0 7 1/2 to 0 08 1/2
Soda ash, 487° to 587°	1 25 to 1 35
Chip logwood	1 50 to 1 75
Castor oil	0 07 to 0 08
Cocconut oil	0 07 to 0 08

NEW BLACK FOR WOOL

EMPIRE BLACK

Absolutely Fast ONE DIP Black

Unequaled for depth of shade Users of black should investigate.
Fastest Black on the market.

F. E. ATTEAUX AND CO.

BOSTON.

CANADIAN BRANCHES:

41 Colborne Street,
TORONTO13 Leinola Street,
MONTREAL

A. KLIPSTEIN & CO.

122 PEARL STREET, NEW YORK.

HAMILTON, Ont.

24 Catherine Street, N.

MONTREAL, Que.

17 Leinola Street

Chemicals and Dyestuffs.

CARBIDE BLACK E

Cheapest and Best One Dip Black on the Market

HEADQUARTERS FOR

Caustic Potash 90%

Chlorate of Potash

Phosphate of Soda

Yellow Prussiate Potash

Carbonate of Potash

Bleaching Powder

Refined Cutch A K.C.

Yellow Prussiate Soda

BRANCHES—

BOSTON—25 1/2 Congress St.

CHICAGO—126 Kinzie St.

PHILADELPHIA—60-62 N. Front St.

PROVIDENCE—13 Mathewson St.

Sole Agents for the Society of Chemical Industry, Basle, Switzerland.

POLLACK BROTHERS & CO.,

Canadian Sales Dept. for

H. A. METZ & CO., NEW YORK.

Sole Agents for the products of FARBERWERKE V. RM. MEISTER LUCIUS & BRUENING, HOECHST a/ MAIN.

Anilines, Alizarines, Synthetic Indigo, Etc.

55 ST. FRANCOIS XAVIER ST., MONTREAL.

FIRE PROTECTION.

**FIRE HOSE—
Cotton—Rubber Lined.**

**FIRE HOSE—
Linen—Unlined.**

Full Stock constantly on hand.

**HIGH GRADE
“GENUINE OAK”
(ENGLISH TANNED)**

LEATHER BELTING

No Shoulders, Necks or Bellies.

ENGLISH CARD CLOTHING

Full Stock on Hand.

QUALITY UNEXCELLED.

D. K. McLAREN,

132 Bay Street, Toronto.

751 Craig Street, Montreal.

HANDY TO HAVE AND TO HOLD

The Engineers' Hand book, just issued by the proprietors of THE CANADIAN JOURNAL OF FABRICS, makes a book of over 160 pages in flexible binding, for handy reference. It contains useful tables and data for the Power User and the Practical Man.

The tables, etc., relate to Steam, Hydraulics, Electricity, Wireless Telegraphy, Strength and Weight of Materials, Methods of Measuring and Calculating, Tables of all kinds of Weights and Measures, including the Metric System, Wages and Interest Tables and Miscellaneous Information.

Price, 50 cents per copy.

ADDRESS:

BIGGAR-SAMUEL Limited
MONTREAL or TORONTO

The M. J. Wilson Cordage Company, of Chatham, have been conferring with the Minister of Justice in regard to the penalties for violation of the Binder Twine Act reported last month. Mr. Wilson claims that this twine was intended to be exported to Boston, and not for sale in Canada, and therefore the penalties should be remitted.

The factory building erected at Toronto Junction, Ont.,

by J. Ferson, for the manufacture of white goods, has been purchased by the Enterprise Hosiery and Underwear Co., of which W. Smith, late supt. of the Almonte Woolen Mills, is manager. The new company begin operations at once, and the present buildings may be extended. The most modern knitting and carding machines will be installed, and forty girls employed the first year.

EVAN ARTHUR LEIGH

232 Summer Street, Boston, Mass., U.S.A.

IMPORTER OF

Textile MACHINERY
Etc.

Sole Agent for the U. S. and Canada for

Messrs. PLATT BROS. & CO.
(LIMITED), OF OLDHAM, ENGLAND.

BY FAR THE LARGEST MAKERS OF TEXTILE MACHINERY IN THE WORLD

Platt's Cotton, Woolen and Worsted Machinery.
Sole makers of Brown's Patent Carding Rollers for Wool—give
woolen yarn a worsted appearance.
Platt's Special Machinery for making English & French Worsted Yarns.
Platt's Special Machinery for making Cotton Waste into Yarns.

Also Sole Agent for U. S. and Canada for

Messrs. MATHER & PLATT

Salford Iron Works, Manchester, England.

Bleaching, Dyeing and Finishing Machinery and Archbutt-
Deeley System of Softening and Purifying Hard Water.
The Best System on the Market.

Wool Washing and Drying Machines. Garnett Machines. French
and English Napping Machines. Sykes's Card Clothing for Cotton.
Critchley's Card Clothing for Woolen and Worsted. Varey's Fallers.
Harding's Pins and Circles. Dronsfeld's Grinders and Emery Fillet.
Comber Aprons, Condenser Aprons, etc.

Textile Machinery Association, Limited,
Flax, Hemp and Jute Machinery.

George Hodgson, Limited,
Bradford, Looms for Worsteds, etc.

The Automatic Feeding Machine Company,
Feeders for Fibres of all classes.

HYDRO-EXTRACTORS

FOR

WOOL, COTTON, WORSTED
AND ALL OTHER

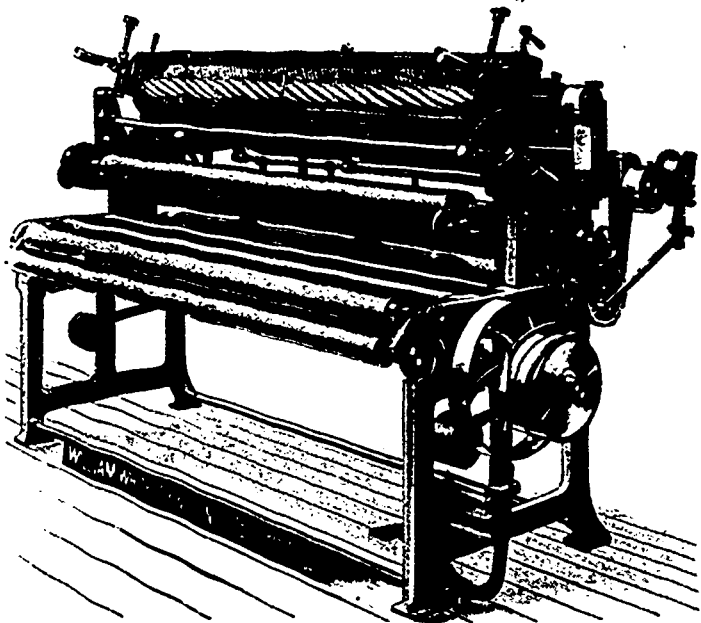
TEXTILE TRADES

WATSON, LAIDLAW & CO.,

DUNDAS STREET, GLASGOW, SCOTLAND.

Send for
Our 1904 Catalogue.

William Whiteley & Sons, Ltd.
LOCKWOOD, HUDDERSFIELD, ENGLAND



Complete Cloth Finishing Plants
Tentering and Drying Machines
Wool and Cotton Drying Machines
Improved Self Acting Mules
Winding, Warping and Sizing Machines
and other Woolen Machinery

Mercerizing Machinery. Complete Plant for Aniline Black.
CATALOGUE ON APPLICATION.

WILLIAM FIRTH, President. EDWIN BARNES, Vice-President. JOHN H. NELSON, Treasurer.

WILLIAM FIRTH COMPANY

67 Equitable Bldg., - 150 Devonshire St., BOSTON, Mass.

SOLE IMPORTERS OF

ASA LEES & CO. Limited, Textile Machinery of every descrip-
tion for Cotton, Woolen and Worsted

SOLE AGENTS FOR

JOSEPH STUBBS, Gassing, Winding and Reeling Machinery for
Cotton, Worsted and Silk.

GEO. HATTERSLEY & SONS, Ltd., Makers of every description
of Looms, &c.

JAMES MACKIE & SONS, Ltd., Makers of Flax, Tow, Hemp and
Jute Preparing and Spinning Machinery.

GEO. ORME & CO.'S Patent Hank Indicators, &c.

JAMES YATES & SON, Hardened and Tempered Steel Card
Clothing for Woolen and Worsted Cards.

LOCKETT, CROSSLAND & CO., Engravers and Builders of
Leather Embossing Machinery, &c.

R. CENTNER FILS, Heddles.

GOODBRAND & CO., Yarn Testing Machinery, Wrap Reels, &c.

JOSHUA KERSHAW & SON, Roller Skins, &c.

GEORGE SMITH, Doffer Combs, &c.

BRADFORD STEEL PIN CO., Comber Pins. [&c.]

CLAPHAM, SMITH & CO., Caps, Tubes and Spindles for Worsted,
ALSO AGENTS FOR

JOSEPH SYKES BROS., Hardened and Tempered Steel Card
Clothing for Cotton.

WILLIAM TATHAM & CO., Waste Machinery.

DRONSFELD BROS. Limited, Emery Wheel Grinders, Emery
Fillet and Flat Grinding Machines.

COTTON CORD & VELVET CUTTING MACHINE CO.,

Corduroy Cutting Machines, &c.

Pick Glasses, Leather Aprons, Patent Wire Chain Aprons

The Manual of Lubrication,

Or, How to Choose and How to Use Lubricants for
any description of Machinery
With Methods of Determining the Purity and other Properties of Oils, etc.
By LOUIS STIMPSON

Price \$1.00
Post-paid

Address **BIGGAR-SAMUEL, Limited,**
Fraser Bldg., MONTREAL, Can.



One potent reason for our success is the hearty co-operation we lend the dealer handling our products. Designs on above order appearing in the national publications stimulate trade among the public. — The retailer handling the **STEVENS** gets the benefit!

Send for Illustrated Catalog.
All Jobbers carry our goods.

J. Stevens Arms & Tool Co.
124 MAIN STREET
CHICOPEE FALLS, MASS., U.S.A.

LUCIEN MARCAN'S Successors

BRADFORD (England.)

Exporters of Wool Tops, Noils, Rags, Shoddies, Silk, Mohair, Camel Hair Noils, and all Specialties in Raw Materials required by Cloth, Hosiery, Blanket, Carpet and Felt Manufacturers.

An enquiry will cost you two cents and two minutes' time. If you will favor us with the same we shall be glad to send you samples of any raw material which you may require—quoted at lowest prices delivered at your station, duty and other charges paid.

CABLES—"LUCIEN, BRADFORD"

CODES—A. B. C. 4th and 5th Editions and Private Code.

Labels

FOR EVERY
PURPOSE
AND
EMBOSSED
PRINTED
ENGRAVED

LEVY & Co., 19 Leader Lane, TORONTO

WORLD'S COTTON SPINDLES.

In an article on the world's consumption and production of cotton, prepared by the United States Department of Commerce and Labor, the following table, compiled by Messrs. Latham, Alexander, & Co., of New York, is given, showing the estimated number of spindles in the principal

Canada Bobbin Company,

WALKERTON, Ont.

Successors to
KER & HARCOURT.



Established
1837.

Largest Makers of Bobbins in Canada.

MANUFACTURERS OF ALL KINDS OF

Spools and Bobbins

Used in Woolen, Cotton, Silk, Rope and
Wire Mills, and Small Wood Turnery.

Having lately enlarged and improved our plant, and having a large quantity of well-seasoned stock in the rough always on hand, we are prepared to fill any order carefully and promptly.

countries of the world, and the total in the world during the past four years:

Country.	1900.	1901.	1902.	1903.
Total Canada and Great Britain	45,600,000	46,100,000	47,000,000	47,200,000
Continent	33,000,000	33,359,000	33,900,000	34,000,000
Total Europe ...	78,600,000	79,450,000	80,900,000	81,200,000
United States—				
North	14,500,000	15,050,000	15,150,000	15,200,000
South	4,540,515	5,810,835	6,408,974	7,039,633
Total U.S.	19,130,515	20,869,835	21,558,974	22,239,633
East Indies	4,945,783	5,006,936	5,006,965	5,100,000
Japan	1,220,975	1,250,000	1,400,000	1,450,000
China	600,000	600,000	600,000	600,000
Total India, China and Japan	6,766,758	6,856,936	7,006,965	7,150,000
Canada	670,000	680,000	690,000	700,000
Mexico	500,000	500,000	500,000	500,000
Total Canada and Mexico	1,170,000	1,180,000	1,190,000	1,200,000
Total, world	105,667,273	108,756,771	110,655,939	111,789,633

E. T. CARTER

Successor to JOHN HALLAM

WOOL
35 years at the old stand:
83 & 85 Front Street East
TORONTO
DOMESTIC AND FOREIGN WOOLS

LONG & BISBY

DEALERS IN

Foreign and Domestic

WOOL AND COTTON

GENERAL COMMISSION MERCHANTS
HAMILTON, ONT.

JOHN E. BROWN,

Foreign and Domestic

WOOL

77 McNab Street N.,
HAMILTON, ONT.

The R. Forbes Co.

(Limited)

Manufacturers of

WOOLEN AND WORSTED YARNS

For Hosiery and other work

HESPELER, ONT.

INDEX TO ADVERTISEMENTS

Atteaux & Co., F. E.....	4
Barlow, John W.	10
Bellhouse, Dillon & Co.	1
Benson & Co., W. T.....	1
Bischoff & Co., C.....	2
Brown, John E.....	9
Canada Bobbin Co.....	8
Canadian Colored Cotton Mill Co.	12
Cantlie, James A.....	10
Carter, E. T.....	9
Cassella Color Co.....	1
Crabb & Co., William.....	10
Crowe W. M.....	2
Dominion Dyewood & Chemical Co.	1
" Guarantee Co.....	10
" Oil Cloth Co.....	10
Dronsfield Bros.....	13
Eickhoff, A.....	9
Felten & Guilleaume.....	14
Firth Co., William.....	7
Forbes Co., The R.....	9
Fraser, Robt. S.....	2, 13
Garland Mfg. Co.....	2
Gessner, David.....	13
Halton's Sons, Thomas.....	2
Hamilton Cotton Co.....	3
Jack & Co., Watson.....	1
Klipstein & Co., A.....	4
Lachute Shuttle Co.....	9
Lawson & Sons, Samuel.....	14
Leigh, Evan Arthur.....	7
Leitch, A. W.....	1
Levy & Co.....	8
Long & Bisby.....	9
Marcant's Successors, Lucien.....	8
Mather & Platt.....	7
McArthur, Corneille & Co.....	1
McEachren Heating & Ventilating Co 2 & 12	
McLaren, D. K.....	5
" Belting Co., J. C.....	14
Mississippi Iron Works.....	9
Montreal Blanket Co.....	9
Morrice, Sons & Co., D.....	12

Morton, Phillips & Co.....	9
New York & Boston Dyewood Co.....	1
Philadelphia Textile Machinery Co.....	7
Reiche & Co.....	10
Reid & Co., George.....	1
Riley & Co., C. E.....	3
Roessler & Hasslacher Chemical Co.....	2
Rosamond Woollen Co.....	10
Sheldon & Sheldon.....	2 & 12
Smith Woolstock Co.....	10
Stevens Arms & Tool Co.....	8
Stoddard, Haeerick, Richards & Co.....	12
Tor onto Woollen Machinery Co.....	3
Turnhill Co., The C.....	10
Want Advertisements.....	4
Watson, Laidlaw & Co.....	7
Watson Mfg. Co., L. S.....	11
Whiteley & Sons, Limited, William.....	7
Wilson Bros.....	11
" " Bobbin Co.....	13
" " Paterson & Co.....	1
Young Bros.....	9

Established 1848.

A. EICKHOFF

(A. KRAMER, Proprietor)

Manufacturer and Dealer in

Hatters', Furriers', Tailors',
Glovers' and Shirt Cutters'
KNIVES AND SCISSORS.

Knives for all kinds of business always on hand and warranted. All kinds of Cutlery ground and repaired.

No. 381 BROOME STREET,
Between Broadway and Bowery,
NEW YORK CITY

**Matte's, Hughes' and
Robinsonian
Interest Tables**

**Buchan's, Oates' and
Robinsonian
Sterling Exchange Tables**

**Tables in French and
German Exchange.**

Send for Catalogue.

MORTON, PHILLIPS & CO.

Stationers, Blank Book Makers
and Printers

1755-1757 Notre Dame St., Montreal

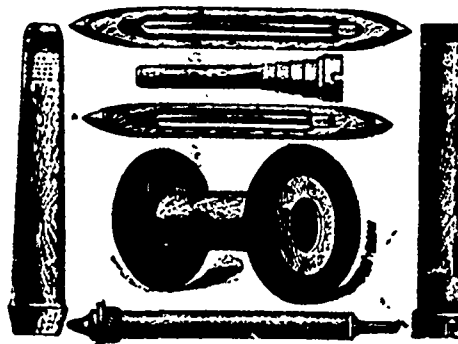
WILSON BROS.

Wool Importers

38 Front Street East, - Toronto.

B. A. WOOLS and CARRONIZED
NOILS a speciality.

The Lachute Shuttle Company



We are the largest Shuttle
Manufacturers in Canada.

Slubbing, Roving and all kinds
of Bobbins and Spools for
Cotton and Woolen Mills

We have always on hand
a large stock of
Thoroughly Seasoned
Lumber.

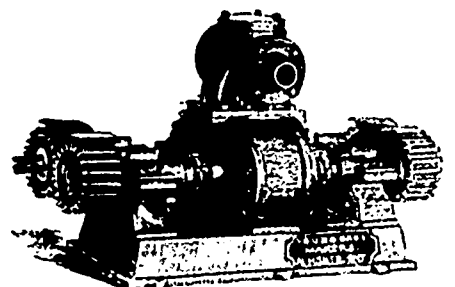
Orders solicited and all work guar-
anteed to give satisfaction.

E. F. AYERS, Manager
LACHUTE, P.Q.

MISSISSIPPI IRON WORKS



ESTABLISHED
1876.



Manufacturers of English or American Pulling Mills and Washers, Wool Pickers,
Exhaust Fan Drivers, Dusters, Rotary Force Pumps for Fire Duty, Hoiler Feet
Pumps, Shafting, Hangers, Castings, Pulleys, Gearing, Forgings.
Equipment of MILLS of every kind. **YOUNG BROS., Almonte, Ont.**

ESTABLISHED 1859

THE C. TURNBULL CO.,

OF GALT, Limited.

Full Fashioned Lamb's Wool Underclothing, Hosiery and
Knitting Yarns, Perfect Fitting Ladies' Ribbed Vests,
Sweaters, Jerseys, Knickers.

"WE HOLD THEE SAFE."

**The Dominion
Guarantee Co.**

LIMITED.

Head Office, Montreal, Can.

CAPITAL, \$200,000.

Insurance against burglary and housebreaking. Policies clear
and free from vexatious or restrictive clauses.

CHAS. W. HAGAR, General Manager

ROSAMOND WOOLEN CO.

ALMONTE, ONT.



Fine **TWEEDS, CASSIMERES, and Fancy WORSTED
SUITINGS AND TROUSERINGS**

Colors warranted as fast as the best British
or Foreign Goods.

Dominion Oil Cloth Co'y

MANUFACTURERS OF Limited

**Oil-
Cloths**

of every description

Floor Oil-Cloth, Table Oil-Cloth, Carriage
Oil-Cloth, Enamelled Oil-Cloth,
Stair Oil Cloth, etc.

Office and Works:

Corner St. Catherine and Parthenals
Sts., MONTREAL, QUE.

SMITH WOOLSTOCK COManufacturers of Wool Stock and
Shoddies of every description.

Dyeing and matching of colors for the Woolen
Mill trade a specialty.

Office and Works:

219 FRONT STREET EAST, TORONTO

RAILWAY ENGINEERING.

By CHAS. B. SMITH, M.A. E.

A concise Treatise on Railway Construc-
tion, etc., for Engineers and Students.

Cloth. 200 Pages.

Profusely Illustrated. - \$1.50.

Biggar-Samuel, Limited, Publishers
Toronto and Montreal.

You are interested in the
Metric System

Of Weights and Measures,
because it will soon be adopted
in Canada.

CHART 10 cts. PER COPY.

BIGGAR-SAMUEL LIMITED,
18 Court Street, TORONTO

TO WOOLEN MANUFACTURERS.

MESSRS. REICHE & CO.

Wool, Tops, Nolls, Yarns, etc.

BRADFORD, ENGLAND.

Represented in
Canada by **JAMES A. CANTLIE,**
22 St. John Street, Montreal.

Samples and Lowest Quotations promptly supplied.
Correspondence solicited.

THE MONTREAL BLANKET CO.

Manufacturers of

**Shoddies, Wool Extracts
and Upholstering Flocks**

Office and Works: COTE ST. PAUL
P.O. Address: MONTREAL

If You WISH to learn something
about the Metric System of
Weights and Measures, write for a copy of
the Metric Chart, 40 x 14 inches, mailed on
receipt of ten cents in stamps or coin.

Address **BIGGAR-SAMUEL, Limited,**
Toronto or Montreal.

AGENTS WANTED.

Local agents wanted to take subscriptions
for an Engineering Publication. For terms
apply, Box B.

Office of Canadian Engineer,
62 Church Street,
Toronto, Ont.

WILLIAM CRABB & CO.

Manufacturers of all kinds of

**Hackle, Gill, Comb and Card Pins, Picker Teeth, Needle
Pointed Card Clothing in Wood and Leather for
Flax, Jute, Tow, etc.**

Hackles, Gills and Wool Combs made and repaired; also Rope Makers' Plus, Picker Pins, Special
Springs, Loom and Shuttle Springs, English Cast-Steel Wire, Cotton Banding and General Mill Furnishings.
Bloomfield Avenue and Morris Canal, NEWARK, N. J.

**JOHN W. BARLOW**

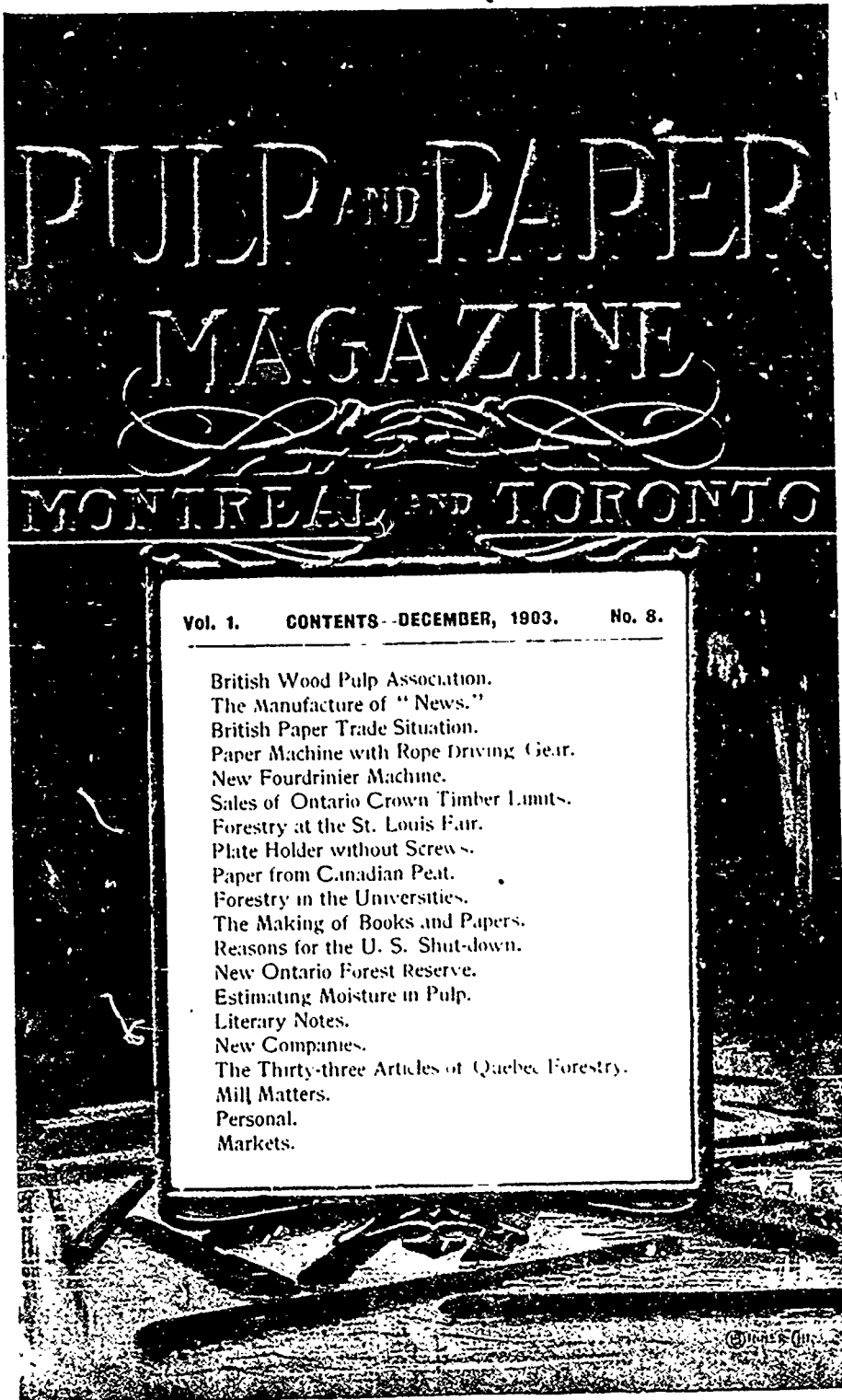
Manufacturer of

LOOM PICKERS,

LAWRENCE, MASS.

This cut represents Barlow's Pat. Bow Picker
with solid interlocking foot. Pat. Feb. 26, 1889.

CONTENTS OF DECEMBER NUMBER.



Vol. 1. CONTENTS - DECEMBER, 1903. No. 8.

British Wood Pulp Association.
The Manufacture of "News."
British Paper Trade Situation.
Paper Machine with Rope Driving Gear.
New Fourdrinier Machine.
Sales of Ontario Crown Timber Limits.
Forestry at the St. Louis Fair.
Plate Holder without Screws.
Paper from Canadian Peat.
Forestry in the Universities.
The Making of Books and Papers.
Reasons for the U. S. Shut-down.
New Ontario Forest Reserve.
Estimating Moisture in Pulp.
Literary Notes.
New Companies.
The Thirty-three Articles of Quebec Forestry.
Mill Matters.
Personal.
Markets.

Subscription \$1.00 a year.

If interested write the publishers.

BIGGAR-SAMUEL, Limited,

18 Court Street, **TORONTO**

or

Fraser Building, **MONTREAL**

STODDARD

**IMPORTERS OF COTTON, SILK,
WORSTED, WOOLEN AND FIBRE
MACHINERY, MILL SUPPLIES,
EGYPTIAN COTTON AND BURLAPS**

**Sole American Representatives for
DOBSON & BARLOW, LTD.**

New Hopper Bale Breakers, Pickers, Cards, Combers, Fly Frames, Mules,
Gassers, etc. Improved Worsted Carding Engines.

PRINCE, SMITH & SON

Gill Boxes, Noble Combs, Drawing, Roving, Spinning, Twisting and Reeling
Machinery for Worsted.

HASERICK

TAYLOR, WORDSWORTH & CO.

Wool Washers, Noble Combs, Rack Washers, Carding Engines, Cone Drawing
for Carpet Stock.

SAMUEL LAW & SONS, LTD.

Card Clothing of Every Description.

WM. WHITELY & SONS

Mules, Tenting Machines, Warpers, Mercerizing Machinery, etc.

E. HOYLE & SONS, LTD.

Dyeing and Finishing Machinery, Hydraulic Presses.

HARDING, RICHARDSON, RHODES & CO., LTD.

Gill and Combing Pins, Needles.

SAMUEL BOWBOTTOM

Spindle Bands and Tapes.

RICHARDS

JOHN DIXON & SONS

Mill Bobbins.

J. PARKINSON

Loom Temples.

J. KAYE & SONS, LTD.

Patent Oil Cam.

J. WHITE & SONS

Apron & Picker Leather.

SOCIETE ALSACIENNE de CONSTRUCTIONS

MECANIQUES de MULHOUSE

Alsatian Cotton Combers, Slubbers for Fine Warps, French System of
Worsted Spinning.

MILL SUPPLIES German Tempered Steel Wire Holders, Persian Ryle
Skirts, Worsted Drop Tapes, etc.

& CO.

152-8 Congress St.,

8 Curren St.

Philadelphia Office,

Boston

Bradford, Eng.

Bourse Bldg.

A NEW GERMAN LOOM.

The Cotton Factory Times gives the following description of a new loom employed in weaving cloth in Germany. "The loom is a four-decker, but can only work with No. 2 and 3 box on right hand side, as the 4 is used for the full and empty shuttles. The looms can run five shuttles, one and one. The loom is driven with a friction motion, like the pulling up motion of a mule. It can be set on or stepped at any time, no matter what position the crank is in. It stops and sets off like lightning. There is only one picking tappet, and it picks for both sides. There are no lags or chains to make for the picking. Wherever the shuttle is it picks it out, if there are two shuttles opposite it does not pick at all, and if there is not a shuttle in the boxes it picks at both sides. It is done from the box swell. When the shuttle is put in the box, it relieves the picking catch of the other side. The box motion is done with levers like Dobercross, but there are no chains to wear like Dobercross. It is all done with rods and levers. If there is anything happens that the box cannot rise or fall the box motion disconnects itself. Nothing can break. It is the same with the picker. It disconnects itself the same. The shedding motion is a centre-shed dobby. They have wheels like Dobercross for pattern, and they work direct on the jack. The letting-off motion is done with levers and springs, and when you have set it with a full warp you have nothing to do with it till it is felled. The taking-up motion is a self-regulating motion with levers and weights. The automatic motion is like a dobby, and there is a plan to make to it. There is a lever to every shuttle that is running, and when a weaver wants a shuttle to come out she has only to reverse that number lever, and when the shuttle leaves the right hand side the 4 box on the right hand side goes up and receives the empty shuttle. Then when that shuttle is wanted it drops to No. 1 box and lets the new shuttle off. Then the first box rises and is ready for filling again. The shuttle can be put in any time. There is nothing in the way. The 4 box, where the empty shuttle goes in, is half-round shape. You can get the shuttle out in any position, and everything is done with the loom running at ninety picks a minute. It does not lower the speed to change the shuttle, and one can the other day fifty-five minutes without a stop of any sort. The price of the loom, it is said, is just over \$300.

◆ ◆ ◆

The strike at the Guelph Carpet Mills has been settled by the men returning to work under existing conditions. The company, in explaining the cause of dissatisfaction, says: "The whole cause was our putting three young men, under twenty-one, on to weave brussels carpet. The union thinks a man must be twenty-one years of age before he is qualified to run a loom. It does not make any difference whether he has the ability at twenty-one or not, or if he has served only one month. As long as he is the required age, that is all they think necessary. These young men had been working with our brussel weavers ever since we started the manufacture of brussels carpet, nearly five years ago, and were thoroughly qualified to make first-class work, or we would not have thought of putting them on a loom. We have added a number of brussel looms to our works this season, and as we had given these young Guelph men the promise of the first chance to have a loom, as soon as these looms were in running order, we fulfilled our promise, and as soon as this took place our old weavers all went on strike."

Established 1823.

41 Highest Awards.

Wilson Brothers Bobbin Co., Limited

Telegrams "Wilson's, Cornholme"
A.B.C. and A1 Codes used.


BOBBINS & SHUTTLES

Postal Address:

Cornholme Mills, Garston, Liverpool.

Office:

14 Market Place, - - - - Manchester.

The best results in
Card Grinding
are obtained by using  **ATLAS** TRADE MARK

**DRONSFIELDS' PATENT
GROOVED EMERY FILLETING**
SPECIALITIES: MACHINES FOR GRINDING CARDS
MACHINES FOR COVERING ROLLERS WITH LEATHER

DRONSFIELD BROS. LIMITED
Atlas Works, OLDHAM, England

TEXTILE MACHINERY (New and Second Hand)



English Sales Attended.

CARD CLOTHING TETLOW'S

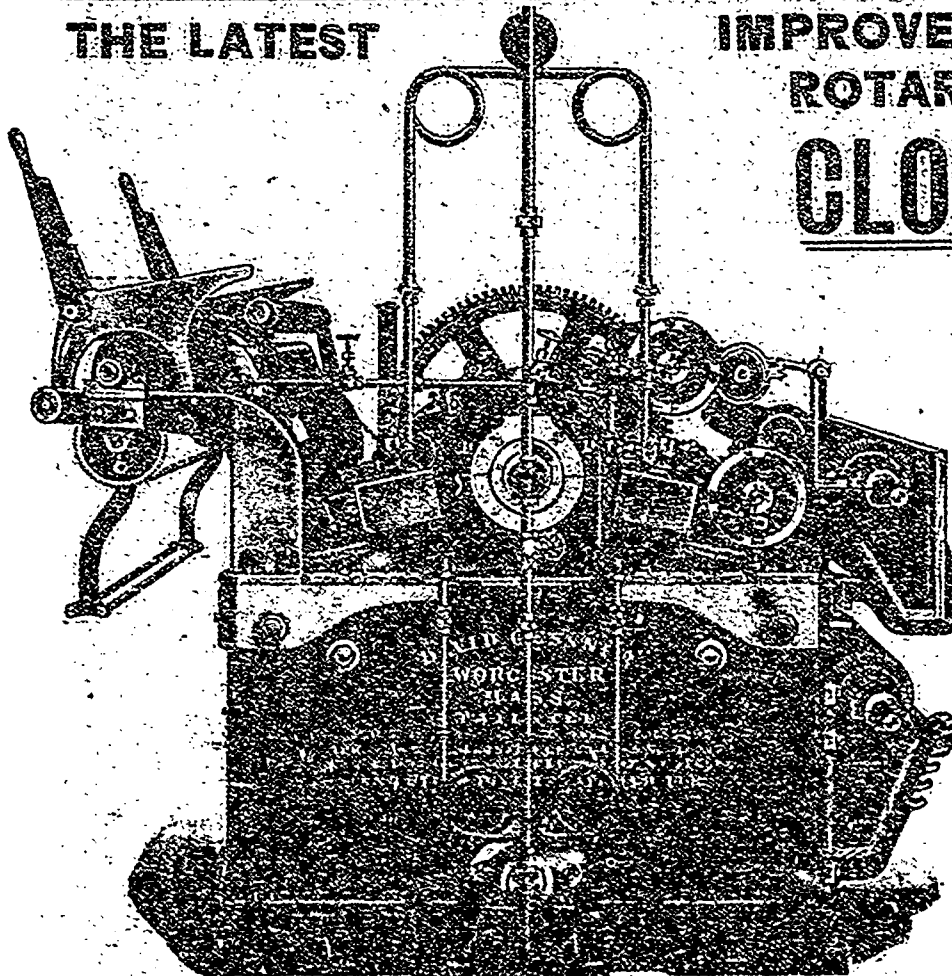
Stock in Canada.

Condenser Aprons Buffed Surfaces
Plain & Grooved
Oak-Tanned and White Belting
Cotton Banding, Rim Spindle and Braided
Shuttles, Pickers, Heddles, Harness
Patent Frames, GENERAL FURNISHINGS

ROBT. S. FRASER

17 LEMOINE ST., MONTREAL

THE LATEST



IMPROVED DOUBLE-BED ROTARY

CLOTH PRESS

The bed plates are self-adjusting, the levers that operate them being mounted upon sliding steel fulcrum bars within the frames. The trussing apparatus of the bed plates is so arranged as to permit not only a forcing of the centres of the bed plates in a forward direction, toward the cylinder, but also away from it, which is of the utmost importance if the bed plates should ever become sprung. Bed plates and cylinder after being cold finished, are ground absolutely true while heated by steam at 75 lbs. pressure, insuring perfectly straight and uniform pressing surfaces. Pressure is applied and removed instantaneously, and by power.

DAVID GESSNER,
WORCESTER,
MASS., U.S.A.

Saves Patience and Avoids Profanity

THE USE OF

OUR "EXTRA" BRAND

THE J. C. McLAREN BELTING COMPANY,

FACTORY: — MONTREAL.

TORONTO.

VANCOUVER.



SAMUEL LAWSON & SONS, LEEDS, England

MAKERS OF

Machinery for Preparing and Spinning
Flax, Tow, Hemp and Jute

Special Machinery for the Manufacture of Binder and Ordinary Twines

Good's Patent Combined Hackling
and Spreading Machine

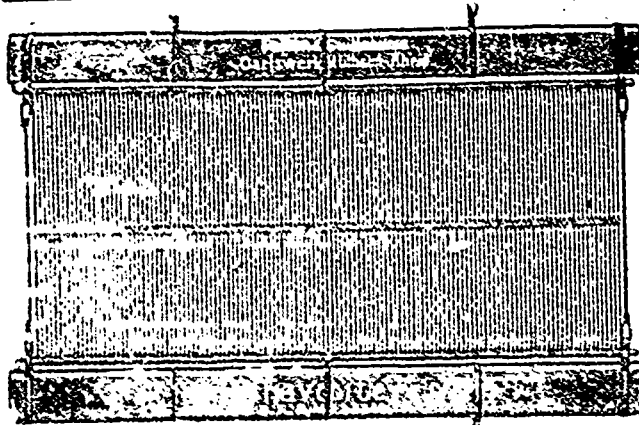
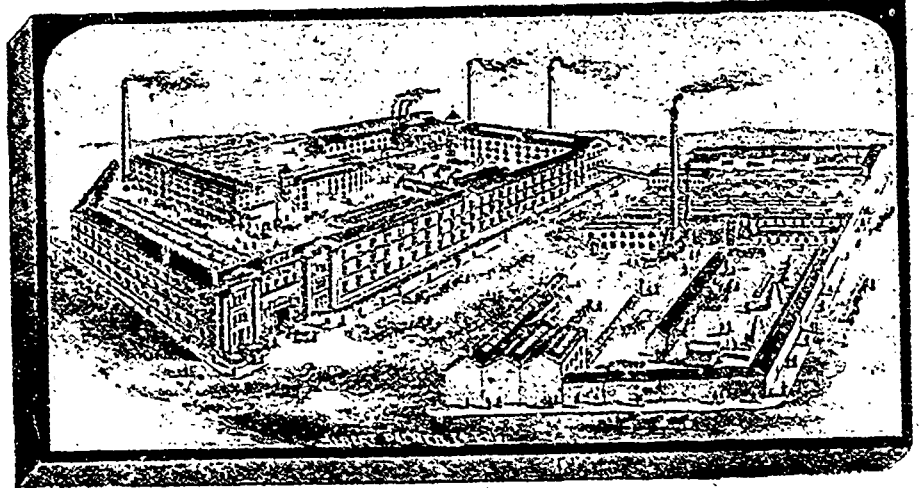
Patent Automatic Spinning Frames
Improved Laying Machines

and other special machinery for the
manufacture of Rope Yarns

ALSO OF

Brownell's Patent Twisting and Laying
Machines for Twines

Council Medal, London, 1851. Grand Meda.
Paris, 1867. Prize Medal, Moscow, 1872. Diploma
of Honor Vienna, 1873. Highest Award, Phila-
delphia, 1876. Medal, Paris, 1889. Highest
Award (Medal), Melbourne, 1880.



*Tellen & Guillaume, Carlsberg
Actien Gesellschaft, Mulheim on Rhine.*

Manufacturers of

Tinned Cast Steel Wire Heddles

made on Patent Automatic Machines and consequently perfectly uniform in every
respect. The Lightest, Exactest and most Uniform Wire Heddles ever made, not
surpassed by any other Wire Heddles in the market.

Patent "Favorite" Shafts for Weaving

etc., combined with other Heddles, the best, most durable and most durable Har-
ness, either made with one or two carrying wires inside the wooden frame. These
shafts have usually been adopted by a great number of weavers, who speak most
favorably of them, as can be seen from many testimonials in the possession of the
makers. For Prices apply to

L. S. WATSON MANUFACTURING CO., Leicester, Mass.

L. S. WATSON MANUFACTURING CO.
LEICESTER, MASS.

Sole Agents for the BEST
Spinning & Texting Travellers
Made by Prouty Wire Co.

Send samples of the Travellers you use and
we will send you a sample box to match
of our make free of charge.

Manufacturers of WATSON'S PATENT MACHINE WIRE HEDDLES

Guaranteed to be perfectly adapted to weaving all kinds of Woolen, Cotton and Worsted Fabrics, Fancy Cotton, etc., etc.
Superior Harness Frames furnished promptly. Also, Hand Cards of every description.

Also Agents for the SMETHURST Reving and Twisting Gear for all woolen manufacturers and makers of yarns. Write us for particulars.