

before it can be used. Yarn in this machine is dyed directly on the cop as stripped from the mule spindle, and can be used without any of these processes. Ring yarns, instead of being skeined, may be wound direct on the cone, at the same cost as skeining and dyed in this state, saving the rewinding and attendant waste. To use yarn dyed direct in the cop will show a saving in processes alone of 5 cents per lb. and upward according to counts. The capacity of a 72-inch machine in sulphur black may be taken at 1,000 lbs. per day at least. A week's output, say 6,000 lbs., at 5 cents saving in processes alone, means \$300 a week. A saving in labor and steam would represent another \$20 to \$30 per week on this production. The machine dyes all the direct colors, as well as the new fast sulphur blacks, and as there is already a large range of these dyes, and almost daily increases to them, the utility and efficiency of this machine is unequalled by any other in existence.

The machine is built on the principle of the "Hydro Extractor" covered in, and has a partitioned cage, which receives perforated boxes packed with cops or other materials. Dye or other liquor is introduced by a spray, supplied by a pump, forcing the liquor against the boxes of cops which are fitted around the revolving cage, by which means the liquor is centrifugally thrown through the material and penetrates with uniformity and certainty. A steam coil under the pan keeps the liquor at boiling or any desired temperature, and the pump being connected to a threeway tap, either circulates the liquor, returns it to the cistern, or, in extracting, sends it down the drain, thus the liquor may be used again and again with little diminution in bulk, and all the advantages of a standing bath. The time required for dyeing varies, of course, with the dye to be obtained. In some cases, as for instance with direct colors, thirty minutes in boiling liquor is sufficient; the maximum for the more difficult colors is about one hour; and under all circumstances much less than in the open vat. After dyeing and without any further disturbances, the material may be washed, softened and "whizzed" comparatively dry, thus saving labor, and much time in stoving. Where the yarn can be wound or used immediately, stoving may be entirely dispensed with. There is no damage to the shape, or fibre of the yarn or other material; cops dyed by this process shutting as easily as in the grey; tubes being quite unnecessary. The saving in tubes, perforated spindles, and time skewering, alone (as required in other cop dyeing processes), makes a difference of at least  $\frac{3}{8}$  per lb. saving in favor of our machine, and the labor and steam cost is exceptionally small. In addition to dyeing, the machine is built to suit other special work, and may be of either the horizontal or vertical types under-driven or over-driven, and by either engine, strap, or electric motor. The sizes vary from a capacity of 60/80 lbs. of cops for the No. 1 machine, 100/120 lbs. for the Nos. 2 and 3, and 240/260 lbs. for the No. 4 machine, at each filling. The machine is self-contained. It is driven by an attached engine, has a direct driven pump and special automatic lubricating device; is furnished with two sets of cop boxes; in fact is ready for attachment to the purchaser's steam, water and liquor connections. It is sold, f.o.b., New York, Boston, Philadelphia, or Montreal, packing free. The Montreal office of A. Klipstein & Co. is 17 Lemoine street.

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W. H. Boyle, superintendent of the Boyd, Caldwell & Co.'s woolen mills, Appleton, Ont., was presented by the employees with a handsome easy chair, on the occasion of his marriage on January 22nd.

## BRITISH WOOLEN EXPORTS.

Returns recently published show that the total value of woolen and worsted manufactures exported from Great Britain in 1903 was £15,864,254, as compared with £15,261,359 for the year 1902. This total includes carpets, flannels, blankets, damasks, hosiery, smallwares, etc., and the following figures show total quantities of woolens, worsteds, and carpets exported during these years:

### WOOLEN TISSUES.

	1902. Yards.	1903. Yards.
<b>Heavy Woolens--</b>		
Broad, all-wool .....	10,132,500	10,512,000
Broad, mixed with other materials..	13,453,600	13,772,600
Narrow, all-wool .....	384,400	375,400
Do., mixed with other materials....	630,800	600,500
<b>Light Woolens--</b>		
Broad, all-wool .....	6,204,400	5,830,300
Broad, mixed with other materials..	9,603,000	10,504,400
Narrow, all-wool .....	2,346,600	3,082,200
Do. mixed with other materials .....	4,384,400	5,979,400
<b>Total .....</b>	<b>47,139,700</b>	<b>50,747,800</b>

### WORSTED TISSUES.

<b>Coatings--</b>		
Broad, all-wool .....	9,527,100	9,026,200
Broad, mixed with other materials ...	6,334,000	6,898,200
Narrow, all-wool .....	555,300	480,800
Do., mixed with other materials ....	1,075,500	777,300
Stuffs, all-wool .....	11,082,500	12,132,400
Stuffs, mixed with other materials ..	74,040,700	77,114,500
<b>Total .....</b>	<b>102,616,000</b>	<b>106,429,400</b>

### CARPETS.

All kinds, not including rugs .....	7,672,100	8,595,100
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The quantities of woolens, worsteds, and carpets exported to Canada are given below, and it will be seen that in each class there was a marked increase in 1903: The following figures show the increases for Canada.

	1903; Yards.	1902, Yards.
Worsteds .....	12,175,200	10,726,100
Carpets .....	3,218,600	2,480,900
Woolens .....	5,225,300	4,929,500

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## NEW COMPANIES.

The Canada Wool Stock Co., Limited, Toronto. Capital, \$20,000. To manufacture and deal in woolen and cotton waste, shoddy and wool stock; woolen, cotton and felted goods and blankets, etc. H. J. Le Fevre, Louise B. Le Fevre, Lakefield, Ont.; H. C. Gwyn, Dundas, Ont.; J. M. Ewing, and B. Osier, of Toronto.

The Clark Blanket Co., Limited, Bullock's Corners, Ont. Capital, \$40,000. To manufacture and deal in blankets, and woolen and cotton goods, or goods made of a combination of wool, cotton, or shoddy. J. Alex. Clark, F. P. Thornton, J. Allen Clark, Agnes Thornton, and Sarah J. Clark, of West Flamboro, Ont.

McIntyre, Son & Co., Limited, Montreal. Cap. \$1, \$1,250,000. To purchase the business of McIntyre, Son & Co., Montreal, and to carry on the business of manufacturing, spinning, weaving, dyeing, bleaching, printing, buying, selling,