

but in the dressing failed to take size well, which caused trouble in the weaving, but when this cotton was blended with a stock of equal length but of more pliability this trouble was overcome and the finished fabric was satisfactory and produced at a slightly reduced cost than if made wholly from the stock as originally used. Now there are some, and capable men, no doubt, who think that there is nothing in it, or it is adulteration at best, but if questioned most of them will admit that they have never tried it. As for adulteration, how much is bought in the way of supplies, oils, dyestuffs, soaps, etc., that has not undergone the process of blending? Question the manufacturers of those goods and they would probably tell you, and truthfully, too, that the process was necessary to produce an article of merit. The popular Sir Thomas Lipton would probably contend that the blending of tea is a fine art and necessary to produce certain flavors; and such is the case with coffee, spices and many other articles of commerce. Why, then, should not the fibre upon which we work and which we know possesses such vast capabilities, why should not that too be blended and be improved by the process?

THE WORLD'S SPINDLES AND LOOMS.

Samuel Andrew, secretary of the Oldham Spinners' Association, has compiled the following up-to-date figures, as to the number of spindles and looms in the world:

	Spindles.	Looms.
Great Britain	49,727,107	719,389
United States, North	14,500,000	335,000
United States, South	6,714,000	153,000
Russia	6,000,000	146,000
Poland	850,000	12,000
Germany	8,434,000	212,000
France	6,150,000	106,000
Austria	3,250,000	110,000
Switzerland	1,558,000	15,500
Italy	2,435,000	110,000
Spain	2,614,000	68,000
Portugal	160,000	Nil
Sweden	372,000	10,000
Norway	88,000	2,300
Holland	300,000	10,000
Belgium	936,000	Not known
Roumania		
Greece	1,000,000	2,100
Smyrna		
India	5,000,000	43,000
China	600,000	1,200
Japan	1,333,000	Hand weaving
Brazil	300,000	15,000
Canada	773,000	18,000
Mexico	500,000	15,000

UNIONS—NOTES ON DYEING THEM.

The dyeing operation is conducted at or near the boiling point, and with the addition of 2 lbs. dried Glauber's salt or 4 lbs. crystallized Glauber's salt in each 10 gallons dye liquor for dark shades, and 1 lb. dried Glauber's salt or 2 lbs. crystallized Glauber's salt in each 10 gallons dye liquor for light shades. For subsequent lots to be dyed the above quantities can be reduced to one-fifth.

Temperature.—The principal means of obtaining even results is a judicious regulation of the temperature. Below the boiling point the diamine colors dye chiefly the cotton,

while the wool does not get well covered until the boiling point is reached.

The following method of working has, by practical experience, been proved the most advantageous: For pale shades the goods, which have been well wetted out, are entered in the lukewarm bath previously charged with the dyestuff and Glauber's salt, steam is turned on, the liquor brought slowly to the boil, and boiling continued until the wool had obtained the required depth.

For heavy shades the bath, containing the necessary amount of color and Glauber's salt, is boiled up for a few minutes; steam is turned off, and the goods are entered dry or wet. After one-half hour's working small samples are taken off for matching.

The following possibilities have to be considered in matching. (a) The wool is still too light in shade. Allow to boil again somewhat longer until the wool has attained the required depth. (b) The cotton is still thin in color. Keep the goods running while the bath is cooling down, adding at the same time such colors as dye chiefly the cotton, according to necessity. (c) The required shade is still not obtained, or both the cotton and wool are not full enough. After the addition of the necessary dyestuffs, boil up and keep the goods running for a quarter to half an hour without steam. It must be borne in mind that by boiling the liquor up repeatedly, the wool may become too dark through feeding off the cotton; long continued or quick boiling should, therefore, be avoided as far as possible.—Boston Journal of Commerce.

ADVANTAGEOUS MULE SPINNING.

According to some of the methods being adopted by some of the mule men on both sides of the Atlantic we see the smallest advantage of time saving is being taken advantage of so as to make the most of the mules; intermittent system of spinning, as over against the continuous method of the ring frame; all the various steps necessary by the changes in the mechanism; each stretch is being so minimized that it is not fully evident whether it is a saving of time or a loss. When we hear such questions mooted as to how much sooner may the backing off of the mule be put in motion before the mule really gets on to the catch so that there be no time lost in the change; or how much sooner may the drawing be put in motion before the backing off is really accomplished, or the faller properly locked, both to save time. Many of us see that this is born of the idea of the use of the hastening motion, which has been a good thing in two ways. When spinning coarse numbers with a slow rim shaft speed and a large rim, it both helped the rim to overcome the law of inertia and give it a good start, as well as acting as a kink preventer by winding the yarn tauter on the bare spindle as the faller rose after unlocking; but we must keep in mind that the hastening motion was never profitably used except on mules with an accessory to lift the drawing-up friction out before the carriage got up to the stops, an incline somewhere on the carriage with an adjustable slot to regulate the lifting out of the friction. This allowed the carriage to finish its inward run by the momentum it has gained, less power being needed than if the change did not take place till the cam changed, and this was a great saving on check bands; and although we have the easing out motion, which allows the carriage to use its momentum in reaching the limit of its outward run, thus requiring less force, if any, to stop the spindles before backing off by the back off friction, yet, we must remember