

BALDWIN'S

TEXTILE DESIGNER

PRACTICAL JOURNAL DEVOTED TO

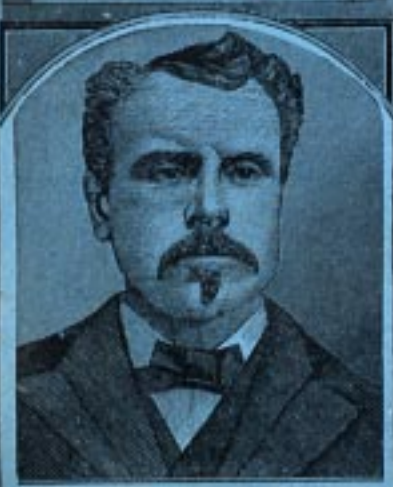
DESIGNING, WEAVING, CARDING,

SPINNING, DYEING AND FINISHING

TEXTILE FABRICS

Vol. II.

No. 1.



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No. 1.

SIMPLE SUGGESTIONS.

[Written for BALDWIN'S TEXTILE DESIGNER.]

BY A WEAVER FROM WAY-BACK.

ONE would naturally be led to think from reading the current literature of the day, published in the interests of cotton and woolen manufacturers, that everything worth saying had been said concerning the management and work of a weaving room; but every-day experience results in turning up something new and interesting to the craft, which, if set up in type may prove a source of instruction and profit.

The weary weaver wants something to read Saturday night, after he has raked down the coal fire, sifted the ashes and digested the last remark of his wife in regard to shooting the coal all over the floor, into the bed-room and under the bed, while trying to put a little into the stove; so almost anything seems refreshing to him as he settles himself down with paper in hand, and complacently spits in the coal hod while his wife gathers up the scattered coal.

The double duties of these men of looking after their work at the mill, and running coal fires at home are enough to make them weary, and if they can pick up a few crumbs of comfort from these simple suggestions they are heartily welcome to do so.

Some men have money and can hire a servant to look after the fires, and some men have ingenuity and can shift it on to their wives. Both of these classes are all right and will get along nicely, but that class of men who possess neither have my heartfelt sympathy.

In the first place, as has often been remarked, no room nor work will take care of itself, but must be looked after and the work done by somebody; and who is to do it, and how is it to be done?

These are the questions.

Somebody will say "that's simple enough, the men who are hired to do it, of course."

Yes, but will they do it? that's the next question.

Somebody said a good while ago, "if you want anything done go and do it yourself."

There is no one who ever took a marked degree of interest in any kind of work but has felt the force of that argument.

In making application of this to the work of a weaving room it does not apply, of course, to work assigned individuals which they are expected to do, but to the thousand and one things which must be done if the overseer would succeed.

Now then, a good overseer feels keenly the responsibility of his position, and no superintendent or agent knows half as well as he does himself how hard he tries to have his work go into the

finishing room all right, and no one knows how keenly he feels any failures. Lots of little imperfections have gone which he knows about, and sincerely hopes that somehow they may slide through without being discovered, and when he is called into the finishing room to see them again he examines the piece with a great deal of interest, while in the presence of the manager, as though he had not seen it in just that light before, but it gives him time to formulate some sort of an explanation which he knows is expected of him, and what can he say?

Now a suggestion is not out of place right here. Why not look at this matter in a philosophical light? In the first place the imperfections are there. No amount of loose talk or growling will change that fact. In the next place, imperfections will continue to be made just as long as that mill continues to run.

The question presents itself: Whose fault is it, and is everything being done to have as few of these as possible?

The weaver may be doing his level best, in his way. A little different method might aid him materially. One thing is sure, unless he has the aid and sympathy of his help in the effort it will be mighty up-hill work.

Fasten that fact firm.

If there is an Achan in the camp it would be good judgment to fasten a mill-stone to his neck, and drop him into the sluiceway. Then again.

Can the superintendent, or manager, work with the weaver to good advantage? Are these two men in perfect harmony with each other? How many things come up every day, which, if they could be talked over in a friendly manner, might result in turning aside lots of the little streams that are washing out the road-way to success.

There are a great many imperfections in goods, which if a manager feels disposed, or doesn't know any better, can throw into a weaving room when they don't belong there any more than they do in the sorting room. Mispicks, wrong draws, threads out or a shuttle smash, without doubt, belong in a weaving room, while striping in the warp or filling, light goods, (if the picks are in), and many other imperfections may as likely belong to some other room.

It may not be an exaggeration to remark that somewhere in the neighborhood of about thirty per cent. of all trouble in a mill is due to a lack of friendliness with each other. Or, to put it in a more matter-of-fact way, is due to petty jealousies and trivial differences, which if they could all be thrown aside and the common interests of the mill be taken more to heart, a revolution for the better would be very noticeable.

It is easy to see that if overseers are friendly with each other,

and a mutual interest in the welfare of the concern exists, no bad work could go from one room to another without a perfect understanding in the matter.

"A house divided against itself cannot stand," neither can the best results be attained in a mill where overseers are at war with each other, and hatred and bitter enmity more or less prevalent among the help.

If bad work is due to a lack of supplies, the manager, if he has confidence in his overseers, and a man of any judgment at all will certainly not see his own success and the best advantages of the mill being crippled when a few dollars judiciously expended will obviate the trouble.

If it is due to poor stock, his dignity will certainly not be impaired in the least by a consultation with his overseers in the matter, and if clearly shown that twenty pounds of a little better stock in the batch at a cost of a few cents will save so many dollars in perfect goods, why not act accordingly?


If it is due to carelessness, then deal with carelessness summarily.

The writer is by no means ignorant of the fact that a woolen mill is not a school of morals, or a place where Christian virtues are prominent in any great degree. Twenty-five years experience in New England mills has nearly obliterated the few ideas ever entertained in that direction.

Like all other work-shops, the mill is filled with men and women who find themselves entered in the great race for bread. They don't philosophize a great deal on questions concerning the best methods of management, it is simply a matter of good work and good pay with them, and when Saturday night comes round, the question of balancing accounts with the grocer and butcher is of far more importance than any other.

Taking into consideration, then, the fact that overseers have to deal with help representing dispositions so varied and strange and that managers and brother overseers may not be all that Christian graces might have made them, the best way which seems to open up to view, is to act by this last simple suggestion:—rally every force of brain, muscle and nerve, which nature may have bestowed, to assist in making the work a grand success; keep these forces in good working order by abstaining from accesses of all kinds whereby they might in any way become impaired; study well the different dispositions with which the powers that be have destined that overseers must deal, and above all, cultivate a cheerful and pleasing manner toward employers and employees, for, dodge the question as we may, the argument of Mathew's is forcible, where he says: "Among the qualities of heart and mind which conduce to worldly success, there are none greater than those which express themselves in pleasing manners."

FASHIONABLE FABRICS.

UR printed calico industry, says *Kuhlou's Journal*, is preparing very pretty novelties for next summer, some of which will differ entirely from the designs known; for instance, one idea is to print on multicolored grounds, and if we may judge from those we have seen at present, the idea will prove a successful one. Printed goods will, by no means, be confined to cotton textures, though the same will naturally play the greatest roll. We have seen printed Crepes de Chine, Foulard, and Surah fabrics, of which the Crepes de Chine seem destined to give many useful hints. Before we enter into details on the qualities and designs for the same, we will just refer to the general character of the latest prints. The flower patterns are never likely to disappear in consequence of the richness of the colors which they bring, but we may count, next season, on a variety of Arabesque, fruit, and other ornamental figures. It has not been forgotten to suit the taste of the hour, and to this end we have imitations of the designs of silk laces, both in stripes and border form; there are also true copies of some of the best designs of the now modern gilt embroidery. Among the stripes, there are many that cannot lay claim to novelty, such as intermixtures of small figures interrogation marks, crescents, &c.; these, however, will continue to answer their purpose for the cheaper trade. The printing on colored grounds, above mentioned, refers only to cotton goods; the Chinese crapes, foulards, &c., have in their fine tissues already

sufficient foundation. As multicolored grounds, we have seen mild raye stripes, and moire foundations. It is particularly essential in printed goods that the colors should be well blended. The fashionable green, which will again be worn next spring, is to be already seen in about sixteen shades, from the lightest May green to the darkest marsh and myrtle green. Plants, grasses, and ferns, are imitated to perfection. After green, the blue tones are the most predominant; in red, the leading shades are terra cotta, copper and coral, which are mixed with apricot blossom, bronze, and coffee brown. The metallic gilt hues, verdigris, and rust tints, are seen either alone, or mixed with other colors. Of the blendings named here, mixtures have been produced with most pleasing results, wherever they have been shown in the above described manner. Another contemporary says:—The materials that will be most used during the approaching season, are, first of all, velvet, handsome Lyons velvet, either plain or fancy. In the way of silk, the prevailing style will be the new manufacture called granite, which is self-colored, but woven with a small pattern, something like what used to be called armure, also moire, striped pekin and satin; and those splendid rich silks called matelasse, woven and brocaded with patterns and shades resembling the tints of Indian cashmeres. This and the granite are the newest things. They are also making in silk, as well as in woollens, what they call putes, for costumes, that is to say, the materials are double width, and have deep borders woven in of different shades, with patterns of feathers, palms, flowers, &c. There are also narrow borders to match for trimming the bodices, &c.

THE SUPERINTENDENT.

[Written for BALDWIN'S TEXTILE DESIGNER.]



WHAT do you call a good superintendent? This question we once heard asked at a gathering of overseers, and the discussion *pro* and *con* showed how little these "would-be" superintendents knew about a superintendent's duty. So many of the craft are ambitious to "get to the top" that they never think of what qualifications are necessary, or whether they are capable of filling the position satisfactory to their employer or not. A superintendent of a woolen mill should be of more than ordinary capacity, able to control his temper, a thoroughly practical manufacturer in every sense, and with an insight into character. While dealing justly with the overseers under him he should not forget his employer's interests, and see that they do not suffer from the petty dishonest schemes of unscrupulous help, whether from wastefulness, carelessness in work or the many other methods known in mills to swell the cost of production.

The superintendent should keep thoroughly posted as to the condition and amount of materials in and about the mill, including the capacity of the machinery, and should insist on the observance of that good maxim, "A place for everything and everything in its place," when not actually in use. How much time is often lost hunting for a certain article when, perchance, some careless overseer has placed it where he himself cannot find it. We have seen superintendents who have been employed in a certain mill a number of years who could not find or tell whether they had such-and-such material on hand or not, and again others who knew where to find things that had not been used or seen for months, or could place their hands on anything needed. Which is the "good superintendent?" Tyrannical conduct in a woolen mill is one of the things that should never be, for the overseers are quick to discern whether the power of their superintendent is judiciously or arbitrarily exercised, and their actions are often influenced by the course he pursues. A gossiping superintendent is one of the curses of a mill. The habit of discussing politics, religion or the latest scandal, is a common one in many mills, and a great wrong to employers. An overseer must think when he is performing his duty, and this he cannot do if his attention is drawn to something else. The habit of promiscuous talk among the help is a dishonest one, and although a few moment's conversation between two operatives may seem a small matter—and generally it includes more help and moments—its result in actual loss to the employer is amazing. I do not advocate military rule, for I see no harm in an occasional joke or witty story, for it relieves the monoton-

ous noise of the machinery, but the privilege of these should never be abused.

Many incidents occur that tend to make the overseer use "cuss" words, and so a "good" superintendent should have a temper not easily ruffled. Hard words are of very common occurrence and do not tend to good fellowship. The common help should be treated with courtesy and respect, for they of the operating class are just as humane as any one else. The superintendent's conduct on all occasions should be guided by justice, and a strict impartiality, and no favoritism should be shown. He will be called on to decide many a petty quarrel between help, and he will need diplomacy to straighten out and restore peace among the affected ones. He should also see that all departments about the mill are kept in proper shape, and that the unnecessary accumulation of waste is not allowed. He should know the capacity of the mill and govern the work accordingly. Some mills have not the facilities for only a certain class of goods, while others are all right for nearly any class. Thoroughly competent overseers—"all round"—should be engaged, for a poor overseer is dear at any price. Let me, right here, say a word to the superintendent in relation to the bright and active second-hand trying to rise. Help and assist him in every way you can, for in after years when he is "full fledged" he will always remember you gratefully, and be an honor to your teaching, or *vice versa*. I speak from experience.

Some excellent superintendents have been addicted to the habit of intemperance, and lost good positions. How absurd to see a tipsy superintendent reproving a man for coming to work intoxicated, when he himself can hardly see straight. Intemperance leads to irregular habits, and will lose the confidence of the employer in the superintendent, and finally results in his discharge.

Although these are only a few of the qualifications necessary to make the "good" superintendent, there is one that should not be overlooked—that is the reading of our trade publications, of which BALDWIN'S TEXTILE DESIGNER is *par excellence*. In it we find the columns filled with good, practical matter, and its teachings must eventually bring fourth good results. Operatives second-hands, and overseers, as well as the "good" superintendent, should be regular readers of this valuable journal.

OLD DESIGNER.

TALKS ABOUT OIL.

[Written for BALDWIN'S TEXTILE DESIGNER.]

BY J. M. M.

(Continued from page 168, Vol. I.)

TESTS TO DETECT ADULTERATIONS.

MANUFACTURERS and mill managers are seldom chemists, therefore intricate, laborious tests which require considerable chemical knowledge, care and experience, would be of no use to them. The tests that are here given are the simpler ones, and may easily be understood by any manufacturer or superintendent, with a little care and attention. It is not of so much importance to ascertain the quantity of adulterants that have been used, as whether *any* has been used or not. Should it be necessary to obtain a quantitative analysis, the oil user had better employ a chemist *expert in testing oils*.

It is always of advantage to keep samples of the different kinds of oils of known purity for comparison, and these samples should be kept in bottles, well corked and in some place not exposed to the light. These will be found of great use in comparing the color and the odor of the oils offered. The odor is much accentuated by heat, and when doubt exists as to the component oils used in a mixture, all that is necessary is to place the sample vial into a hot bath. No great experience is necessary to distinguish the odor of the different oils.

To test for mineral *hydrocarbon oils* in *fish, seed* or *animal oils*, one of the best tests is that of the *flashing point*. The addition of mineral oil lowers the flash point of the original oil. A mixture of even 5% of a mineral oil causes a fall in the flashing point of fish, seed, or animal oils of about 100° Fah., while a mixture of 10% reduces the flashing point 135° to 150°.

A condensed table of flashing points, specific gravity and viscosity is here given, and it should be noted that when fish, seed, or animal oils give a test showing a flashing point of less than 500° Fah., they should be rejected, even though other tests may prove that they are not adulterated, as the low flashing point indicates. They are, if not adulterated, poorly made and of very inferior quality.

TABLE OF FLASHING POINTS OF PURE OILS.

	60° Fah.	70° Fah.	Flash Point.	Viscosity at 70° Fah.
Fish Oil, Sperm	875 Sp. Gr.	854 Sp. Gr.	520 to 530	100
Seed & Veg. Olive	915 "	894 "	550 to 570	211
" " Castor	960 "	945 "	540 to 545	too thick
" " Cotton	920 "	— "	over 600	
" " Rape	915 "	894 "		575 257
Animal Lard	916 "	890 "	570 to 590	218
" Tallow	914 "	892 "	525 to 535	257
Mineral American	860 "	850 "	390 to 400	153

A still farther test for mineral oil is dependent upon the peculiar property possessed by mineral oils in showing prismatic colors on the air bubbles made when the oil is agitated. This is a simple test and quite reliable. It is true that some pure oils also show the prismatic colors but only for an instant, while if mineral oil is present the colors remain. When these colors remain the flash point test should be made.

Another test is the saponification test. This depends upon the property possessed by mineral oils of resisting saponification when mixed by an alkali.

The specific gravity test is only of use when the adulterant employed is of a different specific gravity to that of pure oil, and is not of much use in detecting adulterations, when the adulterating is scientifically done.

The viscosity test is of more importance in oils than are intended for lubricating purposes.

To test for fish, animal, or seed oils, in other oils of the same nature, are more difficult to detect, owing to the flash point being so similar. The best way is to ascertain the specific gravity, and if it should prove to be less than the standard, then test for mineral oil by the method already given. The above applies more particularly to fish oils.

Animal and Lard Oils. Test for specific gravity and if it be found to be very much from the standard, then test for mineral oil. The saponification test will show the presence of any cotton seed or rape seed oil by the change in the colors. When the specific gravity is low, suspect the presence of mineral oil and when high, that of cotton seed, &c.

Olive Oils. The principle adulterant of olive oil is cotton seed oil, and the practice is now so common that it is hard to obtain a pure olive oil. The flash point will detect the presence of mineral oil. Saponification will detect cotton and rape seed oils. But the most delicate test is what is known as the Conroy test by nitric acid, which is as follows: Mix 1 part of strong nitric acid with 9 parts of the oil to be tested, and pour the mixture into a test glass or wide mouthed bottle, capable of holding several times the quantity being tested, apply heat gently, until the action between the oil and the acid is fairly set up. Then remove from the heat, and keep stirring with a glass rod until the action is over. Should too much heat be applied the action becomes violent and unmanageable, and some of the mixture will spurt over. Care should be taken to prevent this, and to keep it from touching the clothes, as a yellow stain will be the result. With a little experience in working this test a person can readily tell the amount of adulteration by the various gradations in color. The pure oil when treated as above assumes a pale yellow or straw color, and becomes solid in a few hours; while any mixture of cotton seed assumes various colors, grading from a pale, delicate, red color, to a deep bronze brown, according to the proportions of adulterant, and takes a correspondingly longer time to solidify. I have before me samples of the pure oils and mixtures, containing 5, 10, 15, 20, 30, 40, and 50 per cent. and any one can easily tell the various percentages by the gradations of color. I find that lard oil mixed with cotton seed, fish or mineral oils, when treated by the above test, shows similar gradations of color.

Mineral Oil. Test the flash point, specific gravity and viscosity. Any oil having a high viscosity and a low flash point is sure to be adulterated and is not fit to use. Cotton and rape seed oils are largely used to give body. These may be detected by the saponification test. Resin and silicate of soda are also used for the same purpose. To detect any adulteration with resin is a difficult matter, as an alkali will not separate it from the mineral oil. There are several methods in use, but they are all too complicated for general use. It is not of so much importance to know what the adulterant is, as to know whether the oil is pure or not, and this can be ascertained by the flash point, and specific gravity.

Saponification test. *Sperm Oil*, when treated with caustic potash shows a light brown shade with light colored streaks or spots. When treated with caustic soda it shows a pale yellow or straw color.

Olive Oil, treated with caustic potash shows a yellowish color and caustic soda a pure white.

Lard Oil, treated with caustic potash shows a white shading to pale yellow. Caustic soda gives a pure white.

Animal Oils and Tallow, treated with caustic potash gives a light brown and caustic soda a pure white.

Cotton and Rape Seed Oils, treated with caustic potash, show a deep brown color, and caustic soda more of a light bronze or orange brown shade.

A method of testing the proportions of mineral oil in any fat oil will be given in a future article.

(To be continued.)

BERANDINE VS. WOOL.

SOME time ago a great fuss was made in a small way over the invention or discovery of a new fibrous material called Berandine. All known textiles were expected to be depreciated in value by this intruder, but wool more than any other, because Berandine, being derived with little trouble from the woody stems of peat, could be put upon the market for that infinitesimal quotation generally spoken of as next to nothing. It could be mixed with other more costly fibres without disadvantage, but especially with wool. When critical inquiry was made into these pretensions, the verdict was decidedly against Berandine. It was said to be rough to feel and difficult to deal with, its inferiority was considered to surpass its cheapness, and it was thought very unlikely that it would injure the market position even of waste wool or cotton. M. Berand, after whom it was named, and the stuff seemed to be snuffed out. Now we hear again that there is a future before the fibre, and fame in store for its originator. Undaunted by adverse opinion, the experiments of many years have been continued, and the turf-tow, in consequence of the improvements in treating it, can now be spun alone, if necessary, or mingled with wool or cotton. "Common goods can be produced in an admixture of 30 per cent. of wool. Fine Berandine serves to make curtains, carpets and common coverlets. With 50 per cent. of wool, beautiful fabrics are obtained for dresses, curtains and carpets." But, best of all in these hygienic days, it has been found that the material possesses strong antiseptic qualities, "that it is highly absorbent, and also serves to decompose vitiated gasses in the air, and to purify the atmosphere from their effects. It is greatly recommended for tropical climates, as it absorbs the miasma thrown off at night from the overheated ground." This is what may be called a large order, and we must wait for some further intelligence.—*U. S. Economist.*

THE KNOWLES LOOM AT THE AUGUSTA, GA., EXPOSITION.

ONE of the largest and most attractive exhibits at the exposition is that of the Knowles Loom Works, Worcester, Mass. It occupies one of the most conspicuous positions in the machinery department, and is viewed with curious interest by hundreds every day. The capital stock of the Knowles Loom Works is \$300,000; employs 527 men, and turns out 3,000 looms per annum. The company manufactures looms for all kinds of woven fabrics, and has eight of its machines in operation at the exposition. Its looms are made on the open shed

principle. The company has twenty-five harness cassimere looms which is regarded as a great curiosity, as anything of the kind was never before seen in the south. The object of the company, however, in making an exhibit at our exposition is to introduce in the south its gingham, plaid and jeans looms, which are especially adapted for southern mills. Among the looms in operation at the exposition are one pick and pick 4x4 box and one 7x1 box, one 4x1 box, and one fancy loom for light dress goods. It also has on exhibition a jeans and satinet loom, which is especially adapted for the woolen mills of Kentucky. A large number of the Knowles gingham looms have already been put in operation in North Carolina, and are giving eminent satisfaction. The looms on exhibition are turning out great varieties of fancy fabrics, the quality of which demonstrates the superiority of the machinery. Textile manufacturers of the south recognize the need of improved machinery, and they should avail themselves of this opportunity to examine the exhibit of the Knowles loom works. With the raw material in abundance at our doors, there is no reason why the south should not become the home of cotton manufacture in the most advanced and superior stage. F. P. Knowles, the vice-president of the company, is personally supervising the exhibit. Though scarcely out the twenties, his bearing is that of a typical business man, fully abreast with the times. He has already made many friends in Augusta, both for himself and his business. W. D. Harris, the traveling representative, and A. B. Whipple, the inspector of the works, accompany Mr. Knowles and are looking after the machinery.—*Augusta Chronicle.*

"THE INTEREST OF EMPLOYER AND EMPLOYED."

[Written for BALDWIN'S TEXTILE DESIGNER.]

AN article with the above heading appeared in the *TEXTILE DESIGNER* for December, 1888. The writer—"OLD DESIGNER"—seems to me to be an employer and to write from an employer's point of view. I like his idea. I think it will come nearer solving the labor question than any other new idea yet proposed. Now let me, as a workingman, advance an old idea. The hired man ought to show as much interest in his work as he would if he were working for himself. This can be done, though it is not very often. I never had my pay raised till I had for some time earned more than I was getting. I never knew an employer to raise the pay of a man who was determined to earn no more than he received. Entirely too many hands are afraid they will do too much; they must stop at quitting time, no matter what the rush may be. Rather than work fifteen or twenty minutes overtime, they will stop five or ten minutes early. I once worked in a mill where the operatives, working by the piece, lost an average of half an hour each, every day, by getting in late and going out early. This required the hiring of more help to get the full amount of work off. There was work enough for the regular help, and no more had they attended to it faithfully. They blamed their employer for hiring more help and not getting more work; yet none of them seemed to think that the whole difficulty might be obviated if they would have put in full time. Earnest, conscientious faithful work, making your employer's interest your own, will, I think, do more to bring about pleasant relations between us and our employers than all the trades' unions, and arbitration boards in Christendom. In slighting our work, we are only biting off our own tongue to spite another man's speech.

One more idea. Strange though it may seem, the employer sometimes knows better how he wants his work done than the man he hires to do it. Then why not let him have his own way? My experience has been that a well-trained, thorough workman cares less about having his own way than he does about pleasing his employer. I have found that it is usually the ignorant conceited botch who thinks it is so degrading to give up his own way. To do his work well, to see how well he can please his employer, should not be merely the motto, but the controlling principle of the life of every one that works for another. We work for money; but money is not all. We like appreciation. Are we sure we earn it before we complain that we do not get it? I have nothing to say about the sins of our employers. They have their faults, but there are plenty of people anxious to point

them out. We workmen must correct our own faults before we make such a fuss about those of our employers. Honest service cannot come to loss. If you serve an ungrateful master, serve him the more. Put God in your debt. Every stroke shall be repaid. The longer the debt is withholden, the better for you.

WORKINGMAN.

FINISHING.—No. 5.

[Written for BALDWIN'S TEXTILE DESIGNER.]

FLOCKING.

FLOCKS are used as a matter of economy, to increase the weight and compactness of the goods at less expense than it could otherwise be done. People, as a rule, have come to be wary of flocked goods, and the clothing dealers placard "free from shoddy or flocks," pinned to a garment of questionable material, has a wonderfully pleasing effect upon the mind of the purchaser. This state of things has come about on account of the many garments, in the lower extremities of which, between the lining and the outside material, may be found a collection of so-called flocks which have not been sufficiently well felted to the goods to resist the force of gravitation; and under such circumstances, it is not strange that flocking has come to be looked upon as a means whereby to cheat and defraud the buyer of woolen goods.

I wish to say in this connection, that the flocking of woolen goods need not necessarily be a disadvantage to either the wearer or the manufacturer. The fact is, a great deal of flocking is not intelligently done, and the result has been unfavorable.

There are three great wrongs, one or more of which may be found in many of our mills, namely, poor flocks, over-doing, and improper manner of applying.

To flock successfully, it is first important to have a good quality of flocks. Poor flocks are not cheap at any price, and yet many a manufacturer, in his endeavor to economize, has become wedded to low priced flocks, with scarcely a thought of what percentage of them went down the stream, or of their final effect upon the appearance of the goods.

It is quite as important to have the flocks all wool, as it is to have good stock in the goods; then the felting qualities of each will cause them to become so connected in the fulling process, that they will not be easily separated; while in poor flocks, there is much that is not of a felting nature, and they can only be "stuffed" into the goods, or pasted on, to be continually working out when the goods are dry.

There are two methods of flocking called dry and wet flocking. The former is sometimes done by the use of a machine into which the flocks are put, and the cloth is run through in such a manner that the flocks are rubbed on and into the back of the goods. A more common method is to sew the edges of the cloth together with the back outward, and when it is in the fulling mill, (rotary) put in the flocks, and allow the pieces to run until the flocks are evenly spread upon them.

This method will answer if but few flocks are to be used, but if more is applied than the dry goods will take up, they remain in the bottom of the mill, and when the soap is applied they become too wet for use, and those already on the goods are liable to roll off and full into little pellets, like bunches before the cloth gets fairly to fulling; after which they will be of no use until dried and cut again.

We favor wet flocking, which to be accomplished successfully must be done as follows: First sew the edges of the cloth together as stated above, so that no flocks will get on the face. Put them in the mill and soap them, or what is better, have them previously soaped in a soaping machine. Allow them to run until the grease is thoroughly started and the fulling begins. then sprinkle in at the back of the mill, directly upon the cloth, flocks enough to cover the goods well, being careful to put it on as evenly as possible. The result will be, that as the goods are in a condition to full, and there is no excess of flocks to roll up, they will very soon become felted to the cloth, when more may be applied in like manner, and so on at intervals, as the case may require. The amount to put on at one time and the length of time between applying will have to be left to the man who performs the work.

By this means flocks are only applied as the cloth is in a condition to receive them, and they readily felt to the goods. An excess of flocks,—that is,—more than the cloth can properly hold at one time, must become embedded in the bottom of the mill, or roll up so that they will not felt to the stock.

It may be said that this method calls for a great deal of care and trouble. But a little, or even a great deal of care, with good results following, is much better than no care and disastrous results.

A little careful thought and attention in this matter, will prove better than the careless practice of dumping a basket full of flocks into the mills and allowing two thirds of them to roll up and become useless.

Careful attention should also be given to the moisture of the goods. The application of the flocks will tend to dry them up, or in other words, the increase in the bulk of the goods, caused by the added flocks, will demand more soap in order to retain the proper moisture for the more perfect fulling of the cloth.

If the goods are to be flocked heavily and it is found that there is not time to add the required flocks before the pieces are up, it will be advisable to start them with a few flocks after the dry flocking method, being careful not to put on more than the goods will take without waste. By this means there will be a two-fold gain. First, there will be a gain by getting the flocks on sooner, and secondly, this application will tend to make the goods full a little longer, giving more time for applying the remainder. It is well to get all the flocks on so the goods can run some little time after the last application, thus giving them a chance to become firmly felted.

One great advantage of wet over dry flocking is that when the flocks strike the cloth the moisture forms them into a sort of paste, so that they remain there. While the dry flocks upon the dry cloth are constantly working through some goods, and the result is, a part of the flocks get on the face.

As already intimated there is a possibility of over-doing. Trying to apply more flocks than the good will take, will tend to check the fulling, so that the goods will run too long and the colors be impaired thereby, and it is possible to check the fulling so that the goods will not come up to the width required; in which case it will be well for the designer to calculate a little, so as to give a little more weight to the goods from the loom, and thus requires less flocking.

MOSE.

RUN THE MILLS ON ORDERS.

EVERY departure from established customs is always met by the sturdiest of opponents. That is no reason, however, why any change is not wholesome. Finally yielding from force of circumstances, they are none the less hostile to the new method. Consignors may urge an adoption of the new schedule, but acquiescence is conceded unwillingly. Our judgment unhesitatingly approves the policy of running the mills on orders, as it has from its introduction. The objection thereto, and it may be urged as important, is the looseness with which orders are accepted. That practice certainly is no more objectionable than the policy of selling goods without other evidence of the purchaser's liability than the delivery receipt. Prior to 1880 but little progress had been made in running the mills on orders. Those making the initiative step have never regretted it, and the policy is now more respected than ever. It brings the manufacturer one season nearer to the consuming demand. Agents are released from carrying charges. The mills are enabled to do their business closer and cheaper. The cost of goods to consumers is reduced. These are some of the advantages. As opposed thereto are such practices as cancellation of orders, returning goods, claims for short measure, deficient qualities and other shortcomings in many respects. Excepting the first, all these are practices as common from spot purchases as from deliveries on orders. Had the order practice been general before or in 1883, the over-production of woolens and cottons that hung like a pall over the market could never have occurred. In no class of fabrics has the beneficent policy of running the mills on orders been so clearly demonstrated as in the production of printing cloths.

There are those who oppose the practice to-day because of

some minor irregularities or unmerchandise methods that it promotes. We say minor, because compared with the many advantages secured, they can be looked at in no other light. Compare the difference in the handling of the staple cottons to-day with that of ten years ago. As recently as 1882, gingham, prints, dress goods, underwear, clothing woolens, and in fact many other classes were accumulated to the extent of thousands of cases for seasonable sales and shipments. Now such goods are made and shipped to purchasers before the dates in past years at which spring or autumn purchases were made. With all these facts before them we fail to appreciate why any one can raise objection to a policy that affords to manufacturers the opportunity to protect themselves against any sudden changes in the market, or to close their mills without any serious loss, should the market disclose any general depression in the near future. Our judgment therefore is, for manufacturers to run their mills on orders only, and particularly woolen manufacturers, while the wool market is so against them. Under such conditions they know exactly what they are doing. And if a few buyers are so deficient in merchantable morals as to violate the simplest commercial etiquette, it will be to the advantage of commission merchants that such deficiencies, whether of accident or intent, have been learned at such a moderate cost, inasmuch as such corrupt practices can be guarded against in the future by leaving the offenders severely alone.—*U. S. Economist.*

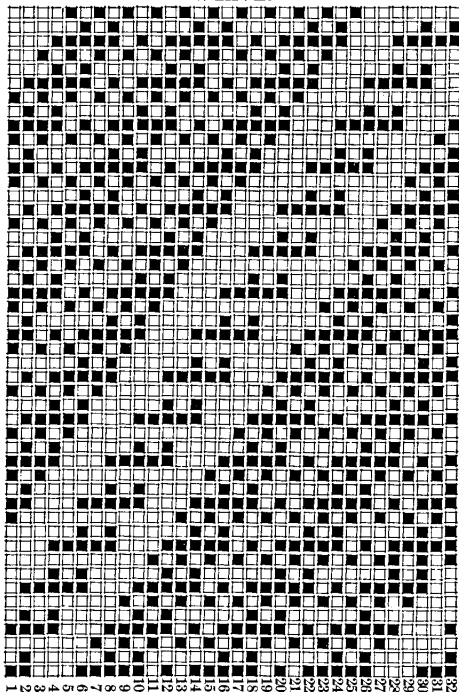
MISCELLANEOUS WEAVES.

PATTERN No. 1.

OVERCOATINGS.

WARP, 4,800 ends, 4 run, dark olive brown mix, 10% white. No. 14 reed, 5 threads in a dent, 68½ inches wide.

WEAVE.



FILLING, 1 black worsted 2-24's. 2 black woolen, 4 run. 3 threads in pattern; 90 picks per inch. Run the first pick of filling in on the first bar of chain. Finished weight 25 to 26 oz.

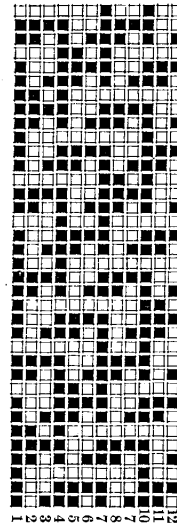
PATTERN No. 2.

WARP PATTERN.

- | | |
|--|-------|
| 1 dark olive brown mix 10% white, 3¼ run, 2-ply. | } 12. |
| 2 crimson, 4½ run, 2-ply. | |
| 1 dark olive brown mix. | } 72. |
| 2 light olive brown, 1¾ run. | |
| 1 dark olive brown mix. | } 12. |
| 2 bronze, 4½ run, 2-ply. | |
| 1 dark olive brown mix. | } 12. |
| 2 light olive brown, 3¼ run. | |

168 threads in pattern; 2,688 ends in the warp; No. reed 9½, 4 threads in a dent, 71 inches wide.

WEAVE.



FILLING PATTERN.

- | | | |
|---|-----|-------|
| 1 black and white mix, 5% white, 3¼ run, 2-ply. | } 6 | } 72. |
| 2 dark slate 1¾ run., | | |
| 1 black worsted loop, (small loop.) | } 6 | } 12. |
| 2 dark slate. | | |
| 1 black and white mix. | } 6 | } 72. |
| 2 dark crimson, 4½ run, 2-ply. | | |
| 1 black worsted loop. | } 6 | } 12. |
| 2 crimson, 4½ run, 2-ply. | | |
| 1 black and white mix. | } 6 | } 72. |
| 2 dark slate. | | |
| 1 black worsted loop. | } 6 | } 12. |
| 2 dark slate. | | |
| 1 black and white mix. | } 6 | } 12. |
| 2 dark bronze, 2½ run, 2-ply. | | |
| 1 black worsted loop. | } 6 | } 12. |
| 2 dark bronze, 4½ run, 2-ply. | | |

168 threads in pattern; 44 picks per inch.

L. A.

HERE is the pickout of a hair line, a good thing for small mills as many are not fitted for pick and pick work; through shortsightedness of mill owners buying looms with boxes on one end of loom only, bought for a certain class of goods. When the day for that was passed then the want of a fancy loom is felt, still the weaver must get along with them in some places.

Warp, 2 black, 1 gray. Filling, 2 gray, 2 black.

DRESSER.

[It is encouraging to receive such patterns as the above from subscribers; it shows that they are beginning to see the knowledge that can be derived from a department of this kind, and it behooves others to take a hand in it. Boys, "wake up," this is a matter of importance to you all; let each one of you contribute a pattern or two monthly and you will soon find yourselves surprised at the array of useful information obtainable in this manner. Exchange patterns with each other through this department, giving full directions with each, and such other suggestions as you deem useful; that is the way to gain information and ideas.—ED.]

TEMPERANCE VS. PROHIBITION.

[Written for BALDWIN'S TEXTILE DESIGNER.]

THE title of this little article would seem to be incongruous, for as it is generally accepted, the two belong together and could not possibly be antagonistic to each other. But such is not the case. Temperance is certainly antagonistic to prohibition, for the latter is directly contrary to the former. A temperate man may also be a prohibitionist, but a prohibitionist can never be a temperate man. Temperance in all things is a cause for which any one may be proud to work, but prohibition is such an extreme in one phase of temperance, that well-meaning and thinking men are unable to reconcile themselves to its doctrines. Temperance as applied to strong drink, is to-day making vigorous headway in the country, all the signs

to the contrary notwithstanding, whereas prohibition is making but a sorry show. Somewhat over one hundred years ago the prohibitory movement originated, but so far it has made but sorry progress, and will, if only given leeway enough, destroy itself ultimately. Now I do not by word or deed, wish to uphold the liquor traffic, but on the contrary, am in favor of restricting the growth of this evil, but can it ever be accomplished by prohibition? History has shown, and recent history at that, that it is a futile attempt to coerce a people into being good. The effect of such treatment has generally been the reverse of that anticipated. But you can educate a people to be good and if wisely handled and persistently employed, this remedy is sure to work with ultimate success. Education then, is the weapon which the temperance man will employ, to rid the country of the drink traffic and at the same time of the prohibitionists, and education alone is able to accomplish it. R.

IT DOES NOT PAY.

[Written for BALDWIN'S TEXTILE DESIGNER.]

IT does not pay to fret in any business, and least of all in the textile business. At best it is a calling full of perplexities and annoying circumstances. A dull season will occur when it is necessary to lay off the help and the machinery stand idle. Without a moments' warning orders will come in until every wheel in the mill is again turning, and the concern is running its full capacity. At this stage some good commission firm will make a call for a profitable class of goods that must be hurried out, regardless of expense. It always happens so. Now, a cool head must direct affairs, or a loss will occur. How much time can be allowed in getting out the goods? How much of the machinery can be put to work on it? What other work can be impeded to hasten this order along? Will it pay to run overtime? All these questions must be intelligently answered, and the tendency is for the agent and superintendent to get badly "rattled" unless they accustom themselves to keeping cool under trying circumstances.

There seems to be a great difference among manufacturers in their ability to say "no" to a commission firm. It is the easiest thing in the world to utter the monosyllable to a peddler or money borrower, but when a firm wants an order of goods completed within a space of time altogether too short, the spinal column of the manufacturer becomes gristle. He takes the order on a promise that he knows is impossible of fulfillment. The result is worry for everyone connected with the concern, until the order is out, and very likely a disappointed and enraged firm.

A fair statement of the unreasonableness of the commissioners' request, frankly and fearlessly made, might have convinced them and saved all the difficulty. It would have been better to let them take their order elsewhere and let some other manufacturer disappoint them, than to make enemies of them. All manufacturers are to a certain extent the servants of these firms, but there is no reason why any manufacturer should be reduced to abject slavery and it does not pay. When a mill is running to its full capacity, the introduction of hurried orders upsets the whole concern, and it is run at a loss, no matter how many orders are turned out.

NEMO.

TEXTILE INTERESTS OF PHILADELPHIA.

PHILADELPHIA, December 20, 1888.

Editor Textile Designer:

DEAR SIR:—The textile manufacturing interests of Philadelphia are looking forward to an unusually active year in 1889 and our designers are, for the most part, busy as they have been for the past two or three months on new designs for all manner of textile work, from the ordinary plain work, up to the most intricate and difficult of execution.

A review of what our designers have been doing recently would be of interest but it would fill a book and only a few general and remote observations will be attempted at the outset. The Textile School of the Pennsylvania Museum, which is under the most competent management of Professor Posselt, is rendering good service in its way and the day and night classes are well at-

tended. The school is supplied with looms of various kinds which serve for practice. It is as yet in its infancy and promises to turn out from time to time some fair designing talent.

Most of our large establishments have their own special designer who know the character of the work wanted, but there are a number of successful professionals who work to order or who offer their work for sale. The spirit of competition of late years has been driving manufacturers to the necessity of securing the very best designing talent available. Those who have expended the most money in this direction are the best advocates of liberality to designers. The latest designs for fine woolen dress goods show a leaning towards picturesque effects, rather than to plain effects. For long years we were content to reproduce, season after season substantially the same goods and same designs, but of late years the severity of foreign competition and the more exacting demands of elevated taste among American buyers have induced a development of designing talent that will result in still greater effort in every branch. Good pay is a strong incentive. The carpet manufacturers have not been asleep and have recently displayed the finest exhibits ever made.

By the action of millionaire Williamson, of our city, some \$2,500,000 have been appropriated by him for the erection of buildings to serve as a trades' school where eventually almost every variety of craft will be taught. There is no limit prescribed to the proposed outlay. It is intended to make it the most complete and thoroughly equipped school in the United States or the world and it is calculated that there will be facilities established for the instruction of two or three thousand boys in various trades. A competent committee has been selected to see to the execution of the scheme.

The increase in the price of wool is reflected in all branches of industry into which wool enters. Trade prospects are bright and the general anticipation among manufacturers, jobbers and commission men is that there will be a big business next year in all branches. Our merchants and manufacturers are co-operating with others elsewhere, to check, if possible, and root out undervaluations so that home manufacturers will not be robbed of the business that rightfully belongs to them.

The Manufacturers' Club, of this city, composed mainly of textile manufacturers, have about completed a grand club house on Walnut street above Broad at a cost, when furnished, of \$100,000. A liberal percentage of outside manufacturers belong. Its aims are twofold; social and business. It will handle strikes, and all questions affecting the common interests of the industry.

The upholstery and curtain goods manufacturers have placed upon the market some of the finest goods ever offered in this country both as to design and workmanship, and prices have receded to a point that brings these goods within reach of thousands who, a few years ago could not look at them. Philadelphia proposes to maintain its lead as a textile manufacturing centre, especially for fine goods and rich effects. M.

NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS.

Office of Wm. E. DAVIDSON, Secretary.

UXBRIDGE MASS., Dec. 20, 1888.

Editor Textile Designer:

WILL you kindly insert the following list of appointments as Resident Secretaries to serve for one year, from Jan. 1, 1889.

Joseph King, Worcester, Mass.; Richard S. Rice, Johnstown, Pa.; George Kavanaugh, Oneco, Conn.; Miles Collins, Providence, R. I.; James O. Crowley, Hyde Park, Mass.; John C. Hassett, Stafford, Conn.; J. P. Keenan, Otter River, Mass.; William Lawrie, Warsaw, Ill.; John S. Clancy, Chester, Pa. C. H. Colbrook, Webster, Mass.

It is hoped that the duties assigned will be discharged with strict fidelity.

WILLIAM H. HASSETT, *President.*

WILLIAM E. DAVIDSON, *Secretary.*



A. A. BALDWIN, Editor & Publisher, BRASHER FALLS, N. Y.
 SUBSCRIPTION, \$2.00 PER ANNUM; SIX MONTHS, \$1.00
 All subscriptions payable in advance.

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Quarter page, 20	Quarter page, 100
One-Eighth page, 10	One-Eighth page, 50

Business Cards per square, size 1x2 1-4 inches, \$10.00 per annum.
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 Remittances to this office should be made by Checks, Drafts, Post-Office Orders, or in Registered Letters. Address all communications to

A. A. BALDWIN, Publisher,
 BRASHER FALLS, N. Y.

NOTICE:

To prevent any misunderstanding, all Articles sent to *Baldwin's Textile Designer* for publication will be considered as offered *gratuitously*, unless it is stated explicitly that remuneration is expected.

Readers are invited to send us items of interest to the Textile Trades.

This office is an agency for the Patterns of E. Lehmann, Paris, France. Latest English and French Novelties in fabrics of all kinds. Orders for these samples received here.

Entered at the Brasher Falls post-office as second-class matter.

BRASHER FALLS, N. Y., JAN. 1889.

"HAPPY NEW YEAR" to all our friends and patrons: May peace, plenty, and prosperity crown your efforts, not only for 1889, but many years to come is the wish of the publisher.

OUR SECOND VOLUME.

ONE year ago BALDWIN'S TEXTILE DESIGNER made its first bow to the manufacturers and mill men of the United States and Canada. Since that time, it has improved, step by step, until to-day it is acknowledged by practical men as the best paper published in America, in the interests of designing, weaving, and general mill practice. In fact its success has been phenomenal in the records of trade journalism, both from a subscription standpoint, and the character of its teachings; while it may truthfully be stated that it is a welcomed monthly visitor in many of the reputable mills established on either side of the border.

While grateful for and justly proud of the liberal patronage, encouragement, and kindly words heretofore received, it will be our continued aim to spare no effort to keep in the van; to make it still more worthy the support of the craft, and to add from time to time such special features as will inure to its value and attractiveness. Its list of contributors and correspondents, now ranking among the best practical men in the country, and whose articles are alike instructive to the employer, the foreman, and the common help, so called, will be increased from time to time, as circumstances warrant; its design department will be retained as a permanent feature giving the latest novelties with explanations as received from abroad from month to month; portraits and biographical sketches of men prominently identified with the interests of the craft will be continued. Each issue will also contain a query and reply department for those of its readers desiring to make use of such. In short, we shall aim to make it as heretofore promised, a helpmeet to the employer, and an indispensable to the employe.

Its management, policy, and purpose, so far successful, will remain unchanged. The bringing of employer and employe into more friendly and intimate relationship with each other, which has been its guide in the past, will remain its platform for the future. The slave of no organization, the tail to no kite, catering to no faction, we propose to wield a free pen, exercising our best judgment, in advocating the right and condemning the wrong, irrespective of parties or position. We shall also aim to make the craft better citizens and better workmen. From an editorial standpoint, we have nothing to add to what has already been stated, and whether our promises have been kept, we leave our patrons to judge for themselves.

Readers, if you are satisfied with the security, "down with the dust,"

ENTERING upon the new year, we feel that we can truly congratulate ourselves and our subscribers on the increased attractiveness of our journal during the past year, resulting from the accession of new vigor and energy to our editorial staff; and while extending our hearty greeting we can give no better promise for the future than that each succeeding number will be a guarantee that we mean to live up to the appreciation so heartily expressed by so many of our correspondents.

A FEW of our subscribers are very delinquent about paying up arrearages and renewing their subscriptions. This we are sorry to see. If you don't want the TEXTILE DESIGNER, say so; if you do want it say so, and be kind enough to remit. It takes money to run a journal and we are sparing no pains or expense to give you a first-class article—in fact, no journal of its class excels it to-day. If you can't pay up in full and a year's subscription in advance, pay part of it; we are ready and willing to accommodate you in most any way. Let us hear from you.

THE special offers announced in the December issue have brought in many new subscribers, as well as renewals, which has been very gratifying to us. Two special features worthy of note are: First, a large number of the new subscribers have called for all back numbers to Vol. I. Second, for every subscriber dropped off we have received a score or more to take their place. This is certainly very encouraging; there are no reasons for us to complain in this direction.

"I DO not need an excuse to express my very high opinion of your journal, which I think the best published. I value it from beginning to end; it does not contain one useless article, and its many useful suggestions are invaluable. It grows better every month." Thus writes an old subscriber; and this is the tenor of many other letters received.

BALDWIN'S TEXTILE DESIGNER

stands without a rival in its special sphere; and it now combines more for less money, and will make a larger return to its subscribers for the present year, than any journal of its class and price. No expense or labor will be spared to keep it fully up to the spirit and requirements of the times, and we therefore feel certain that we shall miss no old friends in the present year, but shall welcome many new ones.

ON another page we publish a letter under the heading of "Textile Interests of Philadelphia," which will be found interesting reading matter. We have engaged a special correspondent to furnish a letter of this character from that city monthly to the TEXTILE DESIGNER, and we believe such will be welcomed by its many readers.

MANY during the past month have taken up with our offer of sending us their photograph, cabinet size, for three months' subscription, and we hope to see this thing continue. Give your name, where and when born, and present occupation.

ALWAYS ready to make improvements as business warrants, we have placed pretty engraved headings at the head of the "Design department" and "Queries and Replies."

SEVENTEEN yearly subscribers, in one order from the Burlington Woolen Mill, Winooski, Vt., December 20. This mill takes the lead on our list; where is the mill that can beat it?

* * *

THOMAS OAKES & Co., Bloomfield, N. J., have lately added to their large mill, twelve new Knowles looms, latest improved.

* * *

A CO-OPERATIVE cotton mill is being built at Atlanta, Ga., for \$250,000. There are 2,500 shares at \$100 per share, payable at \$1.00 per week.

* * *

THREAD from the fibre of the nettle is now spun so fine that 60 miles of it weighs only $2\frac{1}{4}$ pounds. The same fibre has for some time been used in Europe in the manufacture of ropes.

* * *

WE are obliged to lay over several articles until our next issue on account of them coming in too late for this. An article which the writer claims to have sent us two weeks ago has not yet put in its appearance.

* * *

ALTHOUGH many of our readers have announced their willingness to take the "Woven Sample Supplement" should we succeed in starting it, yet, unless many more show their desire for such we will be obliged to abandon the idea.

* * *

PLEASE bear in mind when writing to this office on matters requiring a personal reply, which does not apply to our especial business, to enclose return postage. This may seem of small consequence to speak of, but when you take into consideration that we receive hundreds of similar communications, requiring several hours of our time each day to answer them, it is no more than justice that we should ask for return postage.

* * *

OCCASIONALLY a complaint comes that we have made a mistake on the time of expiration of subscription, or the payment of the same. Of course mistakes will happen in the best regulated offices, but when parties have complaints to make we desire them to send their receipt along with such, thus assuring us that they are right, when the matter will be rectified on our part. We have no other means of protection in this matter than by the receipts which are sent to all on receipt of payment.

* * *

All who find this paragraph in their paper, marked with an under hand, can take it for granted that their subscription expires with the present number. We respectfully request the renewal of your subscription by remitting \$2.00 for one year, or \$1.00 for six months at your earliest convenience. Prompt payments encourage the publisher, and will enable him to add new features to the journal. Please bear this in mind, and don't forget the "hand."

Queries & Replies.

This department is for the interchange of knowledge, with and between our readers, on questions relating to textile manufacturing. We cordially invite all to take part in asking and answering questions through this department. Correspondents must give their name and address, also *nom de plume* if any.

[SEVERAL queries have been answered during the past month by private communications, but at time of going to press none have been received for publication. We would like to see the readers show more interest in this department—perhaps the new heading may liven them up.—ED.]

REPLY TO QUERY IN DECEMBER NUMBER.

No. 20.—I have seen cloth woven in this way, leaving one edge or selvage open, the cloth opening like a book, 1 shuttle only.



DRESSER.

PORTRAIT AND BIOGRAPHICAL DEPARTMENT.

This department is for Manufacturers, Agents, Superintendents, Designers, Overseers, and all persons engaged in the advancement of the Textile Industries. It offers to them a medium through which they can learn each others' Textile History, will promote the welfare of those who appear therein, and, be both interesting and instructive to all engaged in textile manufacturing.

12 PORTRAITS WITH BIOGRAPHIES WERE PUBLISHED IN THIS DEPARTMENT, VOL. I.

Extra copies of this issue may be had at 15 cents each. This price will be strictly adhered to for any number of copies, and to all.

[Engraved expressly for BALDWIN'S TEXTILE DESIGNER.]



MR. J. M. MASSON.

THE subject of this sketch, J. M. Masson, was born on Nov. 14th 1855, and is the second son of John Masson Esq. M. R. C. S., late of "South Ley Lodge," Aberdeinshire, Scotland. When a young lad just entering the university, he had the opportunity of seeing through the extensive mills of J. & J. Crombie, when he became so much interested in manufacturing that he begged his father to allow him to learn the business, and although it was somewhat against the wishes of his people, he was in due time bound an apprentice to the above firm to learn the whole business of woolen manufacturing as conducted in their mills. We may here add that J. & J. C., enjoy a most enviable reputation as manufacturers, and any person who has the good fortune to claim apprenticeship with them is considered *au fait* by manufacturers in Scotland and England. For the next five years he worked faithfully at his chosen profession, and was advanced from time to time as he became proficient in the various details of manufacturing.

In the third year of his apprenticeship, he was given the position of overseer in the dress goods department, both weave shed and weave room, manufacturing all wool unions and silk warp dress goods.

Mr. Masson had the privilege of studying the rudiments of designing under Mr. A. M. Tyffe, late designer and superintendent, Globe Woolen Mills, Utica, N. Y.; who was also an apprentice of J. & J. C. During his apprenticeship,—with characteristic energy and thoroughness,—he had a small loom made and kept in his rooms, where he would be found nightly studying the theory and practice of designing, until he became very proficient in that art. After his apprenticeship, he remained with J. & J. C. for two years as general assistant to manager and designer, when he was favored with an engagement as designer and assistant superintendent to Messrs. Mitchell, Coats & Co., Galashiels,

which position he held until he was engaged by the Rosamond Woolen Co. to go over to Canada as their designer.

In the fall of 1881 he came to the States and was engaged as designer by the Assabet Manufacturing Company, Maynard, Mass.

Thence back to Canada as manufacturer, superintendent and designer to the Hespeler Manufacturing Company, which he soon left and accepted the position of designer to the Auburn Woolen Co., Peterborough, Ont., where he remained until he became connected with the Blythe Woolen Mills, where he has been manager for the past four years.

When employed in Galashiels, he taught the evening class in designing in that town. A few years ago he was designer for the *Textile Manufacturer*, published in Philadelphia, by the late Dr. M. Frank.

His experience as a manufacturer covers a wide range of fabrics and it is worthy of note that his engagements have always been with the leading mills in the different lines of goods. He is not content to follow in the old lines of goods, but is always studying out new ideas in yarns and fabrics, and during his mill life has conceived and brought out several successful novelties.

As manufacturing is his "hobby" we find him an earnest student, having of late years given his attention to the carbonizing of wools, chemistry of dyeing and chemical analysis of oils, soaps, and materials generally used in manufacturing; his aim being to become a thorough expert in all such matters, believing it to be a most important thing for every superintendent to be able, if necessary, to analyze their materials, and thus save perhaps thousands of dollars annually to their employers.

HELPFUL HINTS.

DELIBERATION is one of the characteristics of competence. The thoroughly competent workman knows he is master of his calling, and this knowledge gives him a degree of self assurance that inspires the confidence of his superiors. When a competent designer receives a sample of goods to imitate or make changes therein, he does not rush with mad haste to calculations. He examines the sample deliberately and critically, determines what features are to be brought out, and what is to be the quality of the goods. He then considers what stock in the mill is best suited for it, and makes a sort of mental photograph of the goods as they will appear when finished. All this takes but a few moments' time, and is strictly in the line of economy. After he has determined what to do and how to do it, the rest of his work is all plain sailing.

SEPARATION OF WOOL FROM COTTON IN RAGS.

DILUTE muriatic and sulphuric acids, whether hot or cold, do not attack wool to any considerable extent, but if the acid is strong of course the wool will be gradually disintegrated; and if very strong sulphuric acid is used, the wool will finally pass into solution. But the action of these acids upon wool is very small compared with their action on cotton, which is readily disintegrated by them. This fact is the basis of the process known as carbonizing, in which rags are submitted to the action of acid, washed, dried and beaten. The cotton passes away as dust and leaves the wool. Dilute sulphuric acid is used, and also dilute muriatic acid in the form of gas. With the dilute acids warm baths are used, usually in lead-lined tanks, or even in wooden boxes. The materials should be stirred during the treatment. Sulphuric acid can be used at 8° Tw. but muriatic acid is very much to be preferred. *Jarmain* uses either muriatic acid at 1½° Tw. at 200° F. for 1¼ hours, or the acid at 8° Tw. at 180° F. for 26 minutes. The temperature must not rise above 200° F., or the wool will be seriously affected.

Various kinds of chambers have been recommended for treating the rags with the muriatic gas, and also revolving cylinders. The gas can be driven out of the ordinary acid by heating, and dried by passing it through sulphuric acid or chloride of calcium. The temperature of the chamber must not exceed 200° F. The escaping gas can be absorbed in water with very little loss. Air must finally be driven through to remove the gas, and sometimes the last traces are neutralized with a little ammonia.

In whatever way the rags are treated, they must be finally carefully washed, and dried at about 225° F., and then beaten. The cotton will pass away as dust. This process, if carefully conducted, is said not to injure the wool to any considerable degree. No commercial process for removing wool from cotton rags is known to be in use.—*Textile Record*.

INFLUENCE OF WATER UPON WOOL.

AS in the cases of other textile fibres, wool from the beginning of its treatment, even on the sheep, until the last finishing process, is more affected by water than by anything else with which it comes in contact. Water is made to act in two ways upon wool; it dissolves the substances necessary to be taken away, such as urin, salts, etc., and it replaces them with soaps, finishes, dyes, starch, etc., so that without water it would be impossible to clean and full the wool. Without water all these operations would be useless or different in their character, and often more injurious than beneficial.

Water, particularly at a high temperature, softens the fibre and makes it more supple, while, when it is absent—especially when the natural grease designed for the same purpose has been removed—the wool becomes stiff and harsh.

Without speaking of the washing of the wool, either on the sheep's back or in the factory, which of course requires water, the first operation to consider is the dyeing; for this purpose the quality of the water must be suitable for the dyer; in fact, soft and pure.

The spinning requires water to a less degree, and it is only used to dilute the oil in carding. After the weaving comes the fulling, and here the water plays an important part. By its action together with that of soap and alkali, the projecting parts of the wool during fulling, are freed from grease, and thus the fulling becomes possible. That the water penetrates to the interior of the fibre and softens it is a fact that has not always been admitted. Heat also plays an important part in fulling, for by its action the hard substance of the fibre is softened and the operation facilitated.

That water softens wool fibres can easily be shown in the following way: A piece of moist cloth can be more easily torn than a piece of dry cloth, and woolen cloth is so hygroscopic that it can retain 30 per cent. of its weight in water without being moist, or even damp. On the other hand, manufacturers admit that cloth which still retains some grease, which prevents water from penetrating it, will never felt as well as that from which this matter has been removed.

But if the presence of water aids in fulling, it is also injurious to the cloth if it is submitted too long to its action, for then the water stiffens it, and gives it a particular feel, which cannot always be removed in drying. If, on the other hand, the cloth has been well wrung, and not partly dried by a machine, and is then placed in a very warm stove, it takes on a brilliancy and is full to the touch, showing that the action of water is important in the finish.

In drying, the cloth is also influenced by the action of water, for if a wet piece of cloth is hung up to dry in the air, it will be observed that the lower part, toward which the water has run, will be harder to full than the upper part.

The action of water upon wool is not always the same, or, to speak more correctly, different kinds of wool are not equally affected by water. There are some wools which do not become very flexible under the action of water; and even if very wet, do not fill out well, where others require only a small amount of moisture to take on a brilliant appearance, as in plush. In this regard the origin of the wool plays an important part. To the first class belong Cape wools, and the coarser German wools, while Buenos Ayers, Sydney and Port Philip wools belong to the second class.

The quality of the water is naturally of very great importance, for all the properties indicated below are to be found only in pure water. The water should be soft, and should not contain carbonate of lime nor other substances, while a hard water, such as is found commonly in mountain streams and wells, makes the operations difficult and unsatisfactory.—*Deutsche Wollengewerbe*.

ELECTRICITY IN WOOL.

(Continued from page 175, Vol. I.)

ELECTRICITY in wool is not generally supposed to affect the work injuriously except at certain points in the process, and this is another reason why the matter is treated with so much indifference. Without doubt, a majority of woolen manufacturers, if questioned on this subject, would maintain that possible bad work at the condenser not quite so good spinning, and a little more breakage in weaving or knitting, are some, if not all of the ill effects, even when each department is in the hands of competent foremen.

But we will now return and follow those clean white samples of wool which were put through the picker as we saw in last month's paper. Each sample will be dry enough by this time, too dry to card, so we will therefore oil them, put them into one batch, and, if you like, further dampen them with water, as much as any competent foreman may advise. It must be remembered, however, that what moisture the wool retains after this treatment will, more or less, counteract the action of the electricity. Now if the samples are small, and are put through quickly from the picker to the finishing room, enough moisture will be retained, thus making it rather difficult to prove that the injurious effects are not local and of slight account, instead of being continuous and irreparably damaging to the goods produced. We have previously noted the action of the dry wool when picked, but what of the effect? It felt harsh and crisp in such a condition. Is it not more likely to be injured by the powerful blows of the picker teeth than when in a soft and pliable condition? Of course it will. It is well known that wools, made harsh and dry by certain processes of coloring, though there is no perceptible weakening of their tensile strength, are more easily injured by the action of the machinery than the same wool not so treated. We will suppose that our samples of wool are average sized batches, and that the wool is put in ordinary good condition, but at the same time treated in the usual manner both in the picker room and subsequently, as if electricity was but an occasional and accidental visitor, and that any inconvenience or damage therefrom could no more be averted than a thunderbolt from the clouds.

It must be borne in mind here that the dry wool, previous to its being either oiled or dampened, must needs be put through certain processes, such as dusting, opening, and burring. This latter is especially trying to all stock, however strong and workable, and here comes the first strain and consequent weakening on our easily electrified wool. After being put through the processes just named, we will suppose the stock to be stored under some of the conditions named on page 161 in the article "Wool lubricating oils again." It may be several days before the first of it is used, and several more before the last of it is through the first card. When the first of it comes to the card room, it will be found that some portions of it are already as dry as they were before they were oiled and moistened; others retain the oil, but no moisture, while very likely some of the moisture from these portions has given greater dampness to others, and by adding to the unevenness of its distribution, will have a bad effect in more ways than the one now under consideration. For the first day, especially if the stock is fed by an automatic feeder, enough dampness will remain, and the wet will be sufficiently mixed with the dry, so that no noticeable action of the electric element will show itself on the first card and perhaps on none of them. But after the first day the stock comes to the card room drier and drier, and perhaps a day's stock has been opened up in the hot dry air, of the card room. Some of it thus opened up may remain exposed to this hot, dry air far into the night, and perhaps in air as dry, but colder, over a day's stoppage and an additional night. If the weather is still cold and dry there will be no need to search for the bad work electricity can do. It will be developed everywhere, even if the mill and machinery have been well warmed up before starting, and, worse yet, if, as is very often the case, the steam for heating is not turned on until the power starts. At the breakers the stock will bulge, bag, and split at the combs, or will cling around them. On all the workers throughout the set the stock will stand straight up, to be snatched off in lumps by its own stripper, or will be caught off in sections by the next worker's stripper, thus delivering unevenly. But it is on the finisher that electricity causes the most trouble and damage. Besides the uneven work from the workers, it affects the feed if it is automatic. It causes the stock to stick to the rings and wipe rolls, not because it has any more affinity for them than

it has for the workers, but because the fibres are in every possible position, and unevenly laid. It will cause the rovings to rub together, and when they are once beyond the rubbers they are beyond all control, if no special means have been provided to bring them into subjection. They seem to have an irresistible attraction for everything near, except each other. They will break and run together or be drawn to the other spool, by the spreading fibres that, under other conditions, would lie nicely along the roving to which each belonged, or they will wind around the roll, into bearings and gears, everywhere except where they should go, and it becomes almost impossible to put up these ends, or change the spools without stopping the card.

Please bear in mind that all this happens without regard to the working condition of the cards. No change of that condition of itself will work benefit, as far as electricity is concerned. All remedial measures and appliances must be outside and independent of any that are required simply for the mechanical perfection of the machine for carding purposes, for it is more than probable that these same cards, on the same stock if in a good workman's hands were only the previous evening turning out the smoothest, evenest, and nicest roving imaginable, without other trouble and attendance that was needed for necessary changes. This good and bad work more or less pronounced, will continue to alternate with every change of the weather, with as much exactness as the thermometer or barometer indicate changes. Is it any wonder, then, that spools are broken up, the roving uneven and twitty, the yarn the same, and consequently weak and rotten? The stock is in a condition which renders it easily injured at every point of contact with the machines; in short, in such a condition that it is utterly impossible to lay the fibres in shape to form good roving and perfect yarn. These conditions are constantly and rapidly growing worse as time and the process go on; for as an evaporator, a wool carding machine rivals many that are especially designed for that purpose. The stock is fully, thinly, and lightly exposed over extensive surfaces, and rapidly changed and turned over and over. It is pressed, squeezed, and wiped, subjected to rapid motion and exposed to violent currents of air. It has already been shown how little pains are taken to get and keep the stock in favorable working condition. We will now say something about remedial measures to cure what should be prevented. They are most of them locally applied makeshifts, of no use or benefit whatever until after the stock has passed beyond the last roll of the finishing card, and, in a good or bad condition, is ready to be wound upon the spool.

The simplest device is to pass a metal rod or wire, copper being thought the best, under the roving just in front of the front condenser roll. This keeps the roving in a measure from flying off at a tangent and from lapping around the roll. When the trouble is partially developed, it will be found sufficient for these purposes. More effective yet, in the order named, is to cover the front under roll with iron or copper wire, to run this roll half immersed in water, to burn lamps or gas under the front of the condenser, or to have a steam jet or jets there or in close vicinity. In regard to running the front bottom roll in water, that was accomplished by placing a half circular shell or trough, having, at the back, an inward and downward projecting lip to scrape off the surplus water as the roll turned upward and forward. This was a neat and effective plan, and when the writer first conceived it twenty-five years ago, he thought he had found the *thing* that would cure all the ills for which electricity was responsible. Just at that time, however, Earls' automatic oiler had been applied to the first breaker, on cards where Apperly feeds on both second breaker and finisher made such quick passage of stock through the set that there was no appreciable loss of moisture, and, the result convinced him that it was useless to waste endeavors at the condensers trying to cure the evils resulting from this element.

No one has brought out just the right method as yet, though it does seem likely that a summary of the points made in these papers would point to some cheap and simple method which would effectually prevent them. The said points are briefly stated as follows: That no great amount of heat is required, provided there is a moderate quantity of moisture, evenly distributed and continuously retained, and that there is no better method for obtaining and retaining such moisture than through a moderately damp cool atmosphere.—XXX.—*Industrial Record.*

Designs.

LATEST NOVELTIES

WOOLEN & WORSTED FABRICS FOR LADIES' & GENTS' WEAR.

EXPLANATIONS.

Weave:—The character thus ■ represents a riser or the rising of a harness. The character thus □ represents a sinker or the sinking of a harness. The top bar represents the first pick of filling—reading from left to right or vice versa.

Draft:—The character thus ■ represents a thread and to be drawn on the No. of harness in line with it. The character thus □ represents the skipping or passing the No. of harness in line with it. Always read from left to right—from the front to the back harness.

Warp Pattern:—Draw the threads through the harnesses in the order as laid down in pattern.

Filling Pattern:—Picks required to go into a certain shed will come right by starting the first thread of pattern with the first bar of weave and continue in their order downward unless otherwise specified.

168 PATTERNS WERE PUBLISHED IN THIS DEPARTMENT, VOL. I.

PATTERN No. 1.

A good herring-bone stripe for trouserings, made in fine woollen yarns as follows.

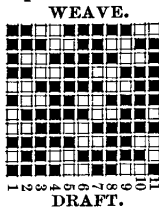
WARP PATTERN.

- 4 black.
- 14 silver drab.
- 26 black.

44 threads in pattern; 2,464 in the warp of 4 1/4 run.

Reed No. 13 1/2, 5 threads in a dent.

Filling all black of 4 3/4 run; put in about 80 picks per inch.



PATTERN No. 2.

This represents a fancy pattern for suitings of a Scotch-tweed effect, in a large diagonal and plaid, produced in coarse yarns as follows.

WARP PATTERN.

- 1 brown and black D. & T.
- 1 black.
- 1 black and white, D. & T.
- 1 black.
- 16 black.

32 threads in pattern; 896 in the warp, and spun 1 3/4 run for the single and 2 run for the double and twist.

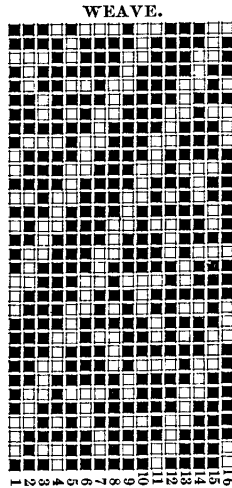
Reed No. 8 1/2, 3 threads in a dent.

FILLING PATTERN.

- 1 black and red, D. & T.
- 3 black.
- 1 black and green, D. & T.
- 3 black.
- 32 black.

64 threads in pattern; 60 picks per inch.

Yarn for the single is spun 2 1/4 run, and for the twist 4 3/4 run, all of slack twist.



PATTERN No. 3.

This represents a fancy combined weave and stripe for trouserings in all worsted yarns, as follows:

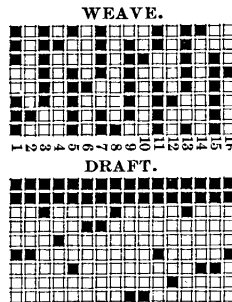
WARP PATTERN.

- 32 light olive brown.
- 16 black.
- 1 red and black, D. & T. } 4 threads.
- 1 black.
- 24 black.
- 1 red and black, D. & T. } 4 threads.
- 1 black.
- 16 black.

96 threads in pattern; 3,360 in the warp. Other colors may be used in the place of those given to a good advantage.

Lay in the reed the usual width for this class of goods.

Filling all black; 66 picks per inch, finished goods.



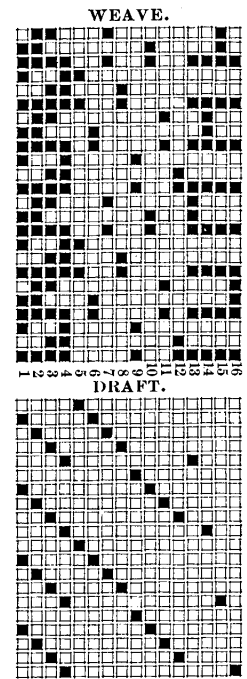
PATTERN No. 4.

This represents a very pretty diagonal effect for suitings. The face of the goods is a cassimere twill, and in the sunk recess of every fourth twill, silk threads appear as if sewed in on a bias with the twill, thus making a very mild and attractive pattern.

- 8 black, fine worsted.
- 1 lavender silk.
- 8 black, fine worsted.
- 1 red silk.
- 8 black, fine worsted.
- 1 lavender silk.
- 8 black, fine worsted.
- 1 orange silk.

36 threads in pattern; 3,600 in the warp. Reed No. 16 1/2 6 threads in a dent.

Filling all black. The face is fine worsted, and the backing coarse woollen. Put in about 80 picks per inch.



PATTERN No. 5.

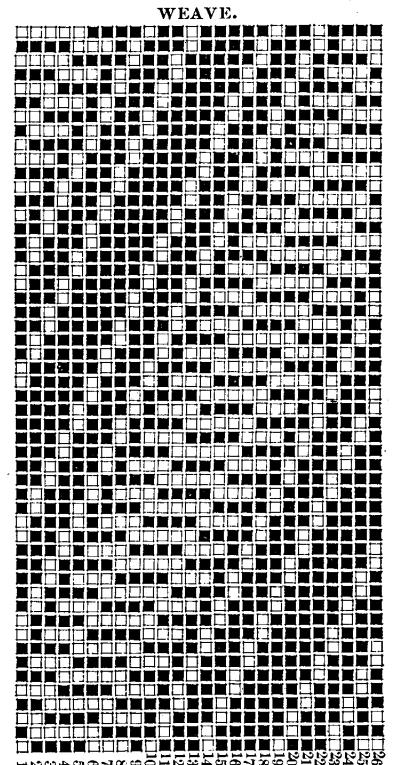
This represents a beautiful diagonal wale produced in fine worsted yarns for coatings, and would also look well for whole suits; although requiring 26 harnesses to weave it. If your looms will not run but 24 harnesses two may be dropped off from the large cord in the middle which would then leave it the same as those on each side of it.

Warp 2,600 ends of black worsted.

Reed No. 12 1/2, 6 threads in a dent, or No. 15 reed, 5 threads in a dent.

FILLING PATTERN.

- 12 black worsted.
- 12 dark olive brown worsted.
- 24 threads in pattern; 72 picks per inch.



PATTERN No. 6.

This represents a handsome diagonal of the corkscrew style, and is a good thing for coatings or suitings, made in the following manner.

WARP PATTERN.

- 1 lavender silk or fine worsted.
 - 3 black, common woolen yarn. 4 run.
-
- 4 threads in pattern, 44 in draft; 2,160 in the warp.

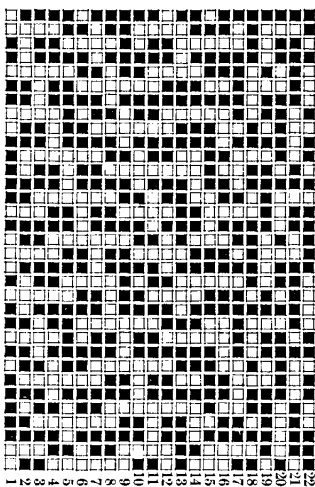
Reed No. 15, 4 threads in a dent.

Any colored thread can be used in place of the lavender, but should be much finer than the other warp threads, which brings it up only as fine specks in the goods as though sewed in regularly.

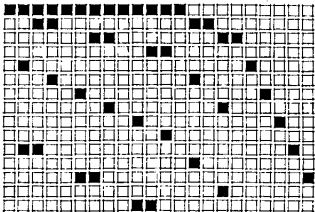
FILLING PATTERN.

- 1 black, common yarn, 3 run.
 - 2 seal brown worsted.
-
- 3 threads in pattern; put in all the picks the warp will stand.

WEAVE.



DRAFT.



PATTERN No. 7.

This represents a nice plaid for suitings. The face is a cassimere twill but in the manner in which the back of the warp is applied, it causes a wale to be seen on the face running the reverse of the twill; the back of the goods also show a fancy stripe.

WARP PATTERN.

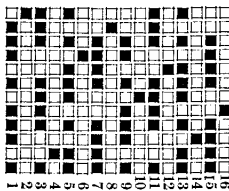
- 8 black.
 - 8 olive brown.
 - 8 red brown.
 - 10 light stain.
 - 1 green worsted. } 6 threads.
 - 1 light stain.
 - 8 light stain.
 - 24 olive brown.
 - 24 light stain.
-
- 96 threads in pattern; 2,688 in the warp, of 5 run yarn; lay out in a No. 11½ reed, 6 threads in a dent.

FILLING PATTERN.

- 2 light drab. } 9 threads.
- 1 black.
- 2 green worsted.
- 1 black.
- 2 light drab. } 6 threads.
- 1 black.
- 2 olive brown. } 18 threads.
- 1 black.
- 2 light drab. } 18 threads.
- 1 black.
- 2 olive brown. } 18 threads.
- 1 black.

72 threads in pattern; and about 72 picks per inch or enough to produce the plaid square. Spin the drab and brown down to 5½ run, and the black 4½ run.

WEAVE.



PATTERN No. 8.

A fancy pin-check and stripe combined, for trouserings; looks nice made in worsted yarns but may be produced in common woolen yarns and look well as follows:

WARP PATTERN.

- 2 black. } 16 threads.
- 2 dark brown.
- 1 cinnamon brown.
- 1 bright red.
- 2 cinnamon brown.
- 1 bright red.
- 1 cinnamon brown.
- 4 white.

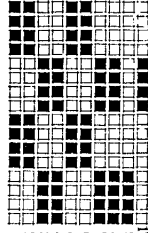
26 threads in pattern; 2,240 in the warp, of 4¼ run yarn, drawn into a No. 15½ reed, 4 threads in a dent. It could be woven on a less number of harnesses, but it is best to use ten.

FILLING PATTERN.

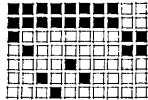
- 4 silver drab.
- 4 black.

8 threads in pattern, of 5 run yarn; put in all the picks you can and have the work go good.

WEAVE.



DRAFT.



PATTERN No. 9.

This represents a pretty plaid effect for suitings, made of common yarns, medium stock, and is a good thing for small mills to make.

Various colors or mixes can be used to good advantage with this weave if desired.

WARP PATTERN.

- 2 orange and green D. & T. } 32 threads.
- 14 dark seal brown.
- 2 red and blue D. & T. } 32 threads.
- 14 dark seal brown.

64 threads in pattern; 1,600 in the warp of 2¾ run yarn for the single, and 5 run for the double and twist.

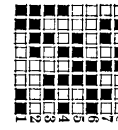
Reed No. 11, 4 threads in a dent.

FILLING PATTERN.

- 2 green and red D. & T. } 32 threads.
- 14 black.
- 2 orange & blue D. & T. } 32 threads.
- 14 black.

64 threads in pattern of 3 run for the single and 5½ for the D. & T. Put in 56 picks per inch.

WEAVE.



PATTERN No. 10.

This represents a very pretty combined weave and stripe for trouserings, made of common woolen yarns, medium stock, in the following manner:

WARP PATTERN.

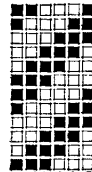
- 8 black.
- 1 red and black, D. & T.
- 3 silver drab.
- 8 gray mix (80 blk. & 20 wht.)
- 3 silver drab.
- 1 red and black D. & T.

24 threads in pattern; 1,440 in the warp of 2½ runs.

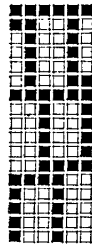
Reed No. 10, 4 threads in a dent.

Filling all black, of 3 run yarn; 50 picks per inch.

WEAVE.



DRAFT.



PATTERN No. 11.

This represents a fine flannel for ladies' dress goods, or gents' shirting.

WARP PATTERN.

- 1 white. } 12 times.
- 1 black.
- 1 black. } 12 times.
- 1 white.

48 threads in pattern; 1,728 in the warp of 6 run yarn; lay out in the reed to finish 36 inches,

FILLING PATTERN:—Same as warp; 6½ run yarn. Put in picks to bring the pattern out square.

Weave with 6 or 8 harnesses, plain.

ENCOURAGING OUTLOOK FOR THE CARPET AND RUG MILLS IN PHILADELPHIA.

THE carpet and rug mills of this city, says the Philadelphia Record, give employment to about 25,000 operatives and yield an annual product aggregating nearly \$50,000,000 in value. This is more than the total annual output of all the other carpet and rug mills in the United States. By far the larger portion of this product is put forth by the factories in the Kensington district, where the tall chimneys cluster thickly, and the rattle of the looms is heard on every hand. Just at this time the thousands of operatives whose subsistence is dependent upon the mills are looking anxiously ahead to see what are the prospects for work during the coming winter. There has been much depression in the carpet manufacturing industry during the past two years, and particularly during the past two months has work been slack. Many mills have been running on short time, while others have not had their usual compliment of employes for a long period. The fall months are usually accounted to be a time of comparative idleness, owing to the fact that they lie just between seasons, when the orders of the past seasons have been cleared up and those for the forthcoming year are not yet in hand.

A consensus of the views of leading Kensington manufacturers indicates that the outlook for the coming winter is very encouraging, and the prevailing belief is that the mills will run on full time with abundant orders at fair prices. The principal work now in hand is the preparation of samples for the inspection of visiting buyers and to send over the road with the traveling men. Every day brings carpet buyers to Kensington from all parts of the country, and the show rooms in the mills are the centres of greatest attraction. There is a marvelous display of new and attractive patterns, and the novel designs in rugs are almost beyond number. As a rule the large rug makers accumulate during each season a certain amount of unsalable stock. It is a fact not generally known that the Smyrna rugs, now so popular, are made only in lots of ninety-eight, a smaller number than this of a single pattern being precluded by the peculiarities of the manufacture. As the beauty of a rug pattern cannot be ascertained until it is in the fabric, it occasionally happens that experimental lots of new designs prove unsalable, and have to be closed out for other markets at nominal prices. The manufacturers have accomplished this clearing out for the present year, and for the most part are now ready to start upon their new patterns for next season, which means spring delivery.

TO BECOME A GOOD LOOM FIXER.

CAN any one become a good loom fixer? This is the question that often has been in the past, and is asked to-day. I will try and make it plain so all that read this may understand my version on the subject. Before explaining what a loom fixer's duties are, and what is required of him at times, I will give a few and necessary qualifications to fit one for that position, and at the same time answer the above question.

To become a good loom fixer, one must be a thorough gentleman; he must be a natural mechanic; intelligent, quick to learn when something is told or shown him; be willing to work hard, and at low pay sometimes while learning, or perhaps get no pay at all for a month or more. Now any one having the qualifications can, with good hope for success, ask: Can I become a good loom fixer, and not get left as so many so-called fixers do? because it is in him and only needs development, which can be had in about three months' time, with some good fixer up with the time and looms.

The first question answered, the next one is: How can I become a good loom fixer? In answer to this I say, if you are not a good weaver, or perhaps no weaver at all, go and learn this part first, for it is necessary that the fixer be a good weaver; he is then able, in many cases, to decide whether either the loom or weaver are doing their duty, and it is about one-half of the fixing to know how to handle the work in the loom and do it well. Having accomplished this, place yourself under the instruction of some good fixer in active service. None of those who are living on pensions

given them by some one, but one who is working for his daily bread, who takes an interest in his work and does it to the best of his ability for his employer's interests as well as his own. Of course you must not expect that he will give you all his years of experience for nothing, for he had to go through the same process you are going through, and he had to pay for learning, so you not only get all he learned but you get his experience besides.

So much for this. Then, when he is told that he has to learn the trade, for such it is, the next question is:

What are the duties of a loom fixer? To give answer to this question, stating what is required of fixers in different mills and places, would fill many columns of this paper, hence I will give a few and the readers can form some idea of the bed of roses in which sleeps the New England fixer. In some well-governed mills, the fixer has charge of a section of looms and nothing else; he is expected to keep that section in perfect order; he must do all the fixing himself, as no weaver is allowed to tinker with the loom, and if there is something wrong with the cloth for which the loom is to blame, he is called to account for it; he must see, too, that the weavers oil their looms properly and as often as necessary, as also, handle them in a workmanlike manner, and should they carelessly break any part thereof, report it to the overseer. In fact, he is to a section what an overseer is to the room, or the superintendent to the mill. In other mills the fixers have additional responsibilities, such as building the chains for their looms. After starting a warp they must look it over carefully; if a mistake is found, have it made right. But this, as well as other duties outside of the loom, should be left to some one for that purpose, and not the fixer.

There are still other mills where the fixer has to oil the shafting in his room, clean the same once a week, take care of the filling for weavers, care of waste, sweep up, in the winter time free the wheel rack of ice, do his own carpenter and machinist work, and in fact, do everything but be boss of the shop.

It has been my privilege to go through all this, hence I know whereof I speak. To the one intending to learn loom fixing I will say, if you want to become a useful man to a mill, go where you have to do everything besides fixing, and some day you'll be superintendent, and know how to run a mill, too.

Bear this in mind: The more work you do while getting a reputation, the less you'll have to do after you have it, and whenever you will want to change situations somebody will want you, perhaps sooner than you can accommodate them, and at good pay.

In my next I will try and fix a very simple loom (cam) worm gear let-off, conditional take-up, open shed, and and of eight-harness capacity, the Stafford shell cam loom.—EX FIXER.—*Boston Journal of Commerce.*

HOW CRAPE IS MADE.

CRAPE is a light, transparent stuff in manner of gauze, made of raw silk gummed and twisted on the twill and woven without crossing. It is principally used in mourning, and was originally manufactured in Bologna, Italy, and afterwards in England.

The manufacture is said to have been introduced into France by one Jaques Dupius, at or about the middle of the seventeenth century. French crapes are chiefly manufactured at Lyons, and are of two kinds, called according to M. Bezon, crepe and lisse.

China crape as the name implies, was originally manufactured in China, and the process for a long time baffled all attempts at imitation. The secret was, however, at last discovered by M. Dugas.—*M. Gazette.*

SOFTENING WATER.

FOR all washing and cleansing operations, says a little pamphlet on "Softening Water, Making Soap, Wool Washing, and Bleaching," if good and economical results are to be obtained, it is indispensable, first to soften the water before using soap of any kind for scouring, fulling or milling purposes. Softening water simply consists in removing the soluble lime salts with which all water (with the exception of pure

rain water) is more or less impregnated from contact with the lime strata in the ground. If this is not done, the soluble lime forms an insoluble lime soap from the decomposition of the soap used for washing. This substance is a greasy, sticky, oily, compound, perfectly insoluble, and more difficult to wash away afterward by any treatment. It is this that causes the yellow grayish deposit on the edges of colars and cuffs washed simply with hard water and soap, and the sticky, greasy deposit on wool when treated in a similar manner, and also on the sides and edges of all washing machines.

It is a most uneconomical proceeding to wash anything in water and soap alone, without previously softening the water. Not a particle of soap can become available for washing purposes until all the added lime in the water has combined with the amount of soap it requires to form the insoluble lime soap. As compared with the pure 98 per cent. powdered caustic soda, such as the "Greenbank" brand, it requires twelve pounds of the very finest pure soap, or twenty or thirty pounds of ordinary soap, such as is usually sold to manufacturers, to do the same work that can be done with one pound of this soda. Or, as compared with refined carbonate of potash, which should always be used for softening water when wool or woollens are to be washed, for reasons which will be explained afterward, six pounds of best pure soap or ten or fifteen pounds of ordinary soap are necessary to do the same work that can be done with one pound of refined carbonate of potash. It is, therefore, pretty evident, for economy's sake, as well as in order to do good work, that all water used for washing or cleansing purposes should be softened previous to use.

SOFTENING WATER FOR COTTON OR LINEN MANUFACTURERS, DYERS, BLEACHERS, AND LARGE STEAM LAUNDRIES.

The exact quantity necessary can only be ascertained in each individual case by chemical analysis, but general directions can be given, which in most cases are sufficiently accurate. They are as follows:

Good Water.—Add one pound of 98 per cent. powdered caustic soda to each 1,000 gallons of water.

Medium Water.—Add two pounds of the soda to the same quantity of water.

Hard Water.—Add from three to four pounds to the same quantity of water.

Water is generally hardest in limestone regions, and in these cases three to four pounds of caustic soda of a high degree of purity (98 per cent.) will be necessary; elsewhere, in ordinary cases, two pounds of this highly concentrated soda is sufficient. Common caustic soda does not do at all well for softening water. Being in large, solid blocks in drums, it is both difficult and dangerous to handle. Besides this, three or four times the quantity of common caustic soda is necessary, as it contains so much salt, sulphate of soda, and other impurities that the water is often considerably hardened by its addition.

Method of Use.—The powdered 98 per cent. caustic soda simply requires to be thrown into the water tank, when full, in the quantities given above. It dissolves almost instantly, and the whole tank only requires to be stirred once or twice to mix the powdered caustic soda through and throw down the lime. If the tank is then left for three or four hours undisturbed, the lime falls and settles at the bottom of the tank, and the clear, softened water can be drawn off by placing the exit tap rather above the bottom of the tank, thus leaving the sediment behind. This settling, however, is not absolutely necessary, except for fine work or dyers' use, as the lime, when once it becomes insoluble, is rendered harmless, and it will not interfere with the soap or washing. If it can, however, be accomplished, it is better to settle out the lime. It is easy to calculate the contents of the tank in gallons in the following manner: Multiply the length, breadth and depth of the tank together; this will give the capacity of the tank in cubic feet; each cubic foot of water is equal to $6\frac{1}{4}$ gallons; consequently, the cubical capacity of the tank requires to be multiplied by $6\frac{1}{4}$ to get the contents in gallons.

Example.—Suppose the tank measures $10 \times 8 \times 4$ feet deep; the cubical capacity is therefore 320 cubic feet; this multiplied by $6\frac{1}{4}$ gives 2,000 gallons as the contents of the tank. Suppose that it

contains medium hard water that requires to be softened, then four pounds of powdered 98 per cent. caustic soda will be required to be added to it for that purpose.

If desired, the powdered caustic soda may be added to the washing machine in the proportions given just before entering the goods to be washed, and before adding the soap. In this case, the mashing must first be turned round once or twice to mix the water and caustic soda, and throw down the lime. If, however, it can be conveniently managed, it is decidedly recommended to soften the water previously in the stock tank, as it can be done more accurately, and to soften a large quantity of water at one operation is less trouble.

SOFTENING WATER FOR WASHING WOOL AND WOOLENS.

For softening water for washing wool and woollen goods, the refined carbonate of potash is much to be preferred to anything else. Soda in any form, when used with wool, has a tendency to make it hard and brittle, and give it a yellowish color. Potash renders wool soft and silky to the touch, and also has a slight bleaching action; therefore potash for softening water and potash soap only should invariably and without exception always be used for washing wool or woollens. This is no theory, but the practical experience of some hundreds of the largest wool washers and woollen and worsted manufacturers of England and America, besides being bourn out by chemical investigation. Nature largely associates potash with wool in the yolk, or grease, with which it is found when growing on the sheep's back, and to the total exclusion of soda.

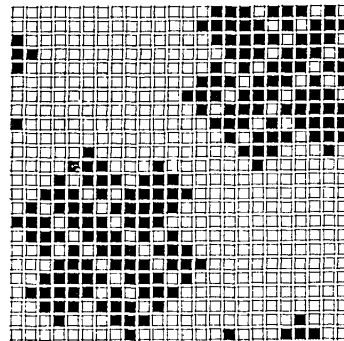
The teaching of nature in such matters is invariably correct, and therefore it is certain that potash, and potash soap only, and not soda in any form, should be used when treating wool. It is only necessary for a manufacturer to give this a practical trial to be thoroughly convinced of the superiority of potash for wool and woollen washing. The raw wool, when it is treated with potash and potash soap, is soft and silky to the touch, and the loss in weight is decidedly less than when soda or soft soap is used—one item alone which far more than counterbalances the slight extra cost of potash. Woollen goods milled or fulled with potash soap have quite a different handle from that of the same goods when finished with soda soap, and the colors of dyed goods will look brighter and altogether different. This matter cannot be too strongly insisted upon with woollen manufacturers. It is no theory, but the result of long practical experience on the subject.

SATIN WEAVES AND SOME OF THE USES TO WHICH THEY ARE APPLIED.

(From the Journal of Fabrics, Eng.)

(Continued from page 180, Vol. I.)

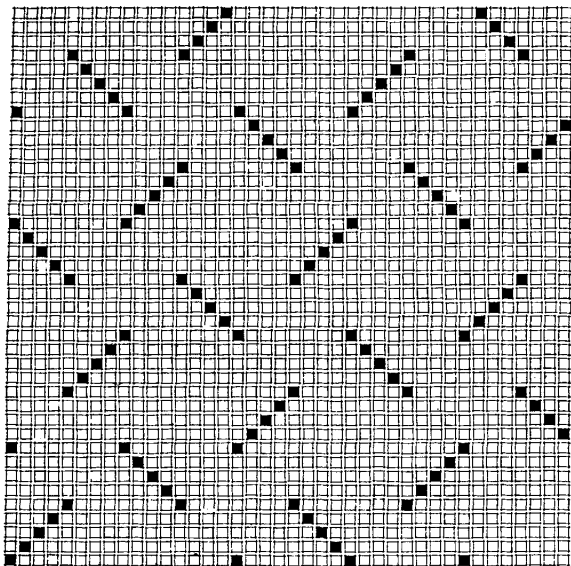
IN arranging small figures of a geometrical character, satins are very largely and very advantageously used, for instance in the case of Fig. 26, there are two spots set across one another, but this arrangement is very unsatisfactory, as we have the figures running diagonally across the piece at an angle of 45 deg's, and the threads at the edge of each figure are working more nearly plain than those in the middle of the figure, and would become tighter than the rest, and have a tendency to produce "cock-



26

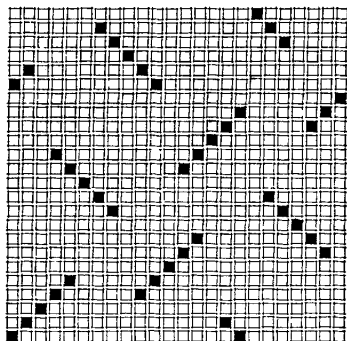
led" effects in the cloth; therefore, to obviate this, and to produce more equal distribution of the figures, satin order is resorted to, and having obtained the requisite space for each figure, care must

be taken that in each diagonal of figures, the figures are set across each other. In Fig. 27 is shown, by means of lines, the direction each spot should be in, so as to preserve this order of alternation. In this diagram, there are 4 sets of 5 figures, as in one set,



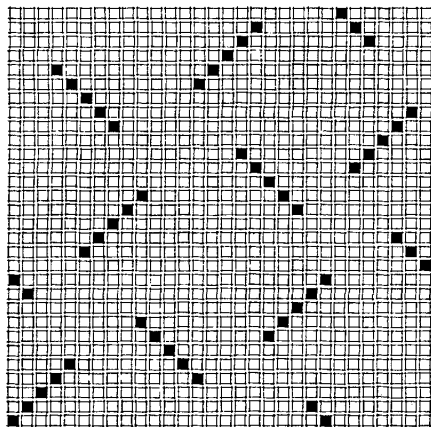
27

we should have 2 figures in one direction and 3 in the other, therefore, the pattern must be extended to 4 times 5 figures, to allow an even number for the total, and to have each figure set across its neighbor. If this arrangement be carefully examined,



28

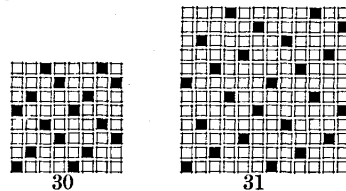
we shall see that the 1st, 3rd, and 5th figures of the first set of figures are in the same direction, and the 2nd and 4th in the opposite direction; and in the second set of figures this arrangement is entirely reversed, and these two sets of figures are then transposed



29

for the third and fourth series. Fig. 28 shows a similar arrangement for 8 figures. In this case the figures are arranged in pairs, to achieve the same object as above. Fig. 29 is again a similar arrangement of 10 figures. Satin order is also very largely used for the arrangement of floral figures, but in this class of figuring, great care has to be exercised in the filling up of the ground, so as, as far as possible, to avoid stripes either in the way of the

weft or warp; for the reason, this 4 end satin or satinet, and the 6 end satin are very often employed, as it is practically impossible to produce stripes by these arrangements. For the benefit of the uninitiated, these two irregular arrangements are appended. Fig. 30 being the 4 end satin, which is simply an ordinary 4 end twill, with the 3rd and 4th ends transposed; Fig. 31, the 6 end satin is partly arranged on a base of 2, with the 5th and 6th ends transposed. Satins are also used to distribute figures in gauze weaving, and some very pretty effects are also produced by having various kinds of crossing, in satin order, arranged in such a manner that they interlace and bend the weft out of its course.



30

31

Satin order is again indispensable in the manufacture of mohair and silk weft plushes, and in this class of fabric, not only must the series of plush picks form a plain pick with the ground, but these series must be arranged in satin order, so as to distribute the points where each series begin, and then each complete series must again be distributed in satin order, otherwise the binding place will show lines diagonally across the piece. In conclusion we would draw the attention of the student, and the young designer, to the arrangement and use of satin orders in all the various forms, and we have no hesitation in saying that if he study carefully the uses to which he can apply them, he will be convinced of their great utility and advantage.

THE MANUFACTURE OF TWO-COLORED YARNS AND FABRICS.

MITHERTO, threads of worsted yarn of various colors have been manufactured by twisting and doubling together threads previously dyed to their respective shades or colors. It was impossible to manufacture fancy threads of two colors from raw yarns twisted or doubled before dyeing, because in the latter process, they were both equally colored by the dye, and therefore, received the same shade of color. The object of an invention recently patented is to obtain, in a single dyeing operation, the effect of a two-colored thread by the combination of a raw, fine cotton thread with a raw worsted yarn thread. It is well known that fibrous materials differ in their relative dispositions to take or absorb color, and the operation resorted to in order to produce the requisite tint depends upon the material it is desired to dye. This combination of two threads of different material admits of varied effects being produced by one or more dyeing operations. When a twisted or doubled thread of this description is dipped in the bath intended for dyeing wool, the cotton is not dyed, but its color remains the same, whilst when it is dipped in the "cotton" bath, the wool may not be dyed at all or it may receive a different shade of color. For instance, the dyeing of the combined thread in a bath of black dye would produce a black and white thread; the color of the cotton can, therefore, be varied at will by dipping it in a bath of the required dye, while the color of the wool remains unaffected. The process required for dyeing wool being generally different from that required for dyeing cotton. It is of importance to employ only fine cotton threads in this combination, because the fine "numbers" are always uniformly spun, and this facilitates the production of an almost perfectly homogeneous thread. Wool threads, on the contrary, cannot be spun uniformly throughout, and the result of this is the formation of thick and thin places in the thread. If woolen threads variously colored are twisted or doubled, the thread produced by this combination presents corresponding irregularities, which are, of course, more or less noticeable in the woven fabric. Instead of dyeing the combined thread and then weaving it, the fabric may be first manufactured from the combined raw white thread and subsequently dyed, or these combined threads may be woven in combination with other threads. The difference between the effect produced by the fancy yarn, as hitherto manufactured, and that produced by the yarn made in accordance with this invention is very striking.

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